The Brain Fog, Long Haul, Alzheimer's connection and what to do to keep your brain healthy Transcript

(Transcripts are generated by AI and may contain errors)

Introduction to Dr. Bredesen

– Welcome welcome. Um this is a really special um addition of overcoming long haul and chronic fatigue. Um Today I have a pleasure of talking with Dr. Dale Bredesen. Dr. Bredesen has been an inspiration to too many of us in this in the field of um I guess his since biology or just taking care of patients with illnesses that other people have felt were incurable or we're waiting for the magic bullet to fix. And Dr. Bredesen is a is an M. D.

And a researcher and um he's got first I'm gonna start off and let him tell us a little bit about his journey um to treating to treating people as they have a systemic problem. So Dr. Bredesen. – Yeah thanks so much for having me Eric. So I got interested in the brain when I was in undergrad and actually I worked at both at caltech and M.

I. T. Uh and then went to medical school to study brain diseases. And of course as you know this is the area of greatest biomedical therapeutic failure.

Alzheimer's as a Network Insufficiency

So when I was a neurology resident it was clear that there was very little we could do about these diseases whether you're talking about Alzheimer's disease or Lewy body disease or frontotemporal dementia or ALS on on and on these are generally terminal illnesses. And so got into lab research to understand the whole idea was what could we do to reduce the global burden of neurodegenerative disease. And the beginning was okay can we get a fundamental understanding, you know the big problem is unlike Covid where we know the virus we have sequence, we have variants. It's pretty clear that this is a viral illness with all of its ramifications.

With Alzheimer's there is not an agreement on what the disease actually is. So people start out you know way downstream. Okay, I'm gonna study structure of amyloid.

Well, wait a minute, let's start way upstream and ask, what is this disease? And our research over the last 30 years suggested that the fundamental nature of Alzheimer's disease is a network insufficiency. That is to say you have this beautiful neural plasticity network that helps you to make and store new information and you've got a supply and you've got a demand and when you get a little older often the supply does not meet the demand. And when you have that recurrently or chronically, your system essentially must downsize to meet the supply that's there.

And of course, as you as you mentioned earlier before we got on here, inflammation, one of the many problems. So pathogens toxins, things like that create increased demand on this network and at the same time you have decreased supply as you have reduced nutrients, reduced hormones, reduced trophic factors, reduced energetic mitochondrial support oxygenation, all those sorts of things. So the equation changes.

And now you are literally downsizing and we would argue that all of the major neurodegenerative diseases are fundamentally the same model, a mismatch between the supply and the demand and you can see this for example, in macular degeneration where anything that increases the demand increases your risk and anything that decreases the supply increases your risk.

So when we treat and prevent these problems, we now increase the supply, decrease the demand. We identify all of the different factors. And so you know, we don't want a silver bullet, we want silver buckshot, we want to go after all the things that are actually driving this.

So I think we have to quit looking at this disease as it's just aggregated protein or it's just amyloid or it's just how these have not led to any effective treatments.

We have to look at what has changed about this network. – And so and this this ties in um the beginning of the mechanisms that you describe of understanding long covid. So I mean and so how would you um you know when you look at long covid um versus Alzheimer's um and I like to at all times.

I don't even like to use that term these days. I thought more like dementia because I think that that's that's a better way of thinking. Um Are there particular mechanisms that you see in in when looking at the other neurologic illnesses that covid? – Yeah. Such a good point because there are multiple relationships here. Let's start with number one, anyone who has had covid is at increased risk for Alzheimer's unfortunately that's something that was just published a few months ago. So this does increase your risk.

It's changing your network as we talked about. You know, you're now increasing that demand. You've got that chronic inflammatory state in many people. Second thing is that there is a similarity here where both in COVID and in Alzheimer's you have the phenomenon where the immune system, you have the innate system which is active and the adaptive system has not been successful at eradicating the insult. So of course in COVID-19 we know the insult very well.

How COVID and Long COVID Affect the Brain

And of course the, you know, the problem here is you've got this cytokine storm and so people can die as you know from cytokine storm in Alzheimer's it's multiple things that are driving it yet there's the same problem.

You haven't gotten rid of those things with the adaptive system. So your innate system is now chronically activated. So instead of dying of cytokine storm, you are dying of cytokines drizzle over years and years.

You continue to have these cytokines that are there unfortunately. And you've got the micro glial activation and you've got the damage that is ongoing.

So, again, something that's critical to address. So, again, there's this relationship between COVID-19 and what's happening with Alzheimer's disease. And then you look at the, you know, immune dysfunction that you've got to you've got to get over that you've got to get that adaptive system functional and you've got to get the innate system down. And of course, in both cases you may end up with autoantibodies. So let's look at you know what happens with long covid. You're really talking about multiple mechanisms as you know and three critical ones have turned out to be number one an increase in thrombin tick events. So you've got micro thrown by in the heart, you've got micro thrombin in the brain and other organs.

And as you mentioned earlier before we came on here spike protein has been it has been a huge issue here. Second thing is you've got this innate adaptive mismatch. You may have in fact fragments of virus which has been shown you may have these for example in the G.

I. Tract. So you may have some situations where you've actually got frag virus still present months out. The third pieces that you then may end up with auto immunity which you see both in some cases of Alzheimer's and in some cases of long covid. So with long covid you frequently end up with brain fog and unfortunately you're at risk for developing dementia.

So we'd like to see em everybody get on treatment and literally prevention for dementia early on when they have covid so that you can optimize the immune system.

You can decrease the likelihood of these multiple micro thrombin and you can increase your likelihood of surviving very long without any major cognitive decline.

– I think one thing that's really important for people to hear is that you know your your research um you know for treating the dementia is exactly what the doctor ordered for preventing um Long covid to increase in the incidence of of of dementia and it really so can you go over some of the some of what you think is like the basics that people should be doing?

– Yeah. Such a good point as I do think. You know, we all and I had covid about a year and a half ago now um despite vaccination just a few months earlier. Um You know, many, many of us have had covid and have had no major problem with it. On the other hand, many have had long covid for all of of us we are at some increased risk.

And so what we found in the laboratory is that there are four major groups of determinants for cognitive decline. And these are important for long covid with brain fog as well as for risk for dementia. So two of them are things that I mentioned earlier that increase the demand and two of them are things that reduce the supply.

So number one is ongoing inflammation. So whether it's from recurrent herpes, whether it's from covid, whether it's from the spike protein still being there, whether it's from other causes anything that causes long term inflammation is going to increase your risk for cognitive decline. So things like resolve ints which are critical.

And I think you know people often say, oh just get rid of the inflammation, you'll be okay, well wait a minute. You also have to find out what's causing the inflammation. So yes, you want to get rid of the inflammation, you want to resolve it, you want to prevent further, but then you want to come in and get rid of what's causing it, whether it's leaky gut.

We had an example just to give you recently a guy who had uh started going downhill with Alzheimer's and for a couple of years they couldn't figure out what is going on.

Why is he, why was he going up? And now he's going down again. It turned out he had a fungus ball in his sinuses. So you know, you can't go around with things like this that are major issues with inflammation and expect to have optimal cognition.

So, you know, you're fighting something chronically for some people, it's the oral microbiome.

Core Factors Behind Brain Fog and Dementia Risk

They have p ginger palace and of course you have to remember, the pathologists have actually shown these same organisms in the brains of patients with Alzheimer's. So we think of these things as being limited to our oral microbiome. They're not, they find their way into our brains. Candida finds its way into your brain uh you know, borrelia finds its way into your brain and so forth, and so on. And what happens your brain now responds and says, I have to produce an antimicrobial and it produces amyloid, which is a beautiful antimicrobial as shown by professors, Robert Moyer and Rudy Tanzi out of Harvard a few years ago.

So this is you know, this is your brain responding and this kind of old fashioned notion that yes, cholesterol causes heart disease and amyloid causes Alzheimer's disease is really missing the point. It's missing that these things are responding to what is upstream that's actually causing the problem.

So number one is inflammation. Number two is toxins. And it's amazing to me because we were not taught about this in in medical school or a neurology residency, how common these are problems.

And again, you're looking at three different parts there, you're looking at in organics. Lots of information on air pollution just in the last few years and it's increased risk for cognitive decline.

Secondly, you're looking at organics, things like Halloween and glyphosate and and and formaldehyde and things like that. And then thirdly, you're looking at biotoxins incredibly common trick Oh, these scenes and okra toxin A and glialtoxins. So all of these these three different types of toxins can contribute to cognitive decline. So again, if you're just barely dealing with these and then you get covid you're not going to deal with them as well and that's going to increase your risk for cognitive decline.

Third piece then is energetic and that is mitochondrial function, cerebral blood flow oxygenation and interestingly ketosis, you've got to have the ketones in the glucose and as you know, you want to have that status of being metabolically flexible So that you can burn both ketones and glucose and interestingly for most of us, as we get a little older, we lose both of those. So it is literally we have a metabolic emergency. We're no longer as good at

metabolizing glucose because we have insulin resistance, like about 100 million Americans.

On the other hand, we also cannot make and utilize ketones because one of the things that prevents you from making ketones is a high insulin level. So, you know, we've got the worst of both worlds.

So that when we see people with cognitive decline, be it related to long covid or be it related to Alzheimer's disease or other forms of dementia. This is a metabolic emergency. You want to look to see what is going on.

What's the homa ir what is the ketone level? Is this person able to get in and use ketones? And as you know, Professor Steven Kennedy Canada has shown that just taking people with mild cognitive impairment and giving them exogenous ketones actually improve their cognition very clearly. So that's part of a much bigger story.

But at least it's a beginning and then the fourth and final group is trophic support and that comes in three flavors also. So you're talking about growth factors, things like nerve growth factor and BDNF and I should mention BDNF brain derived neurotrophic factor has a molecular biology that is intimately related to the amyloid itself. It changes the way the A. P. P.

The amyloid parent is actually cleaved. So there's this really close relationship there. Second thing then is hormones things like testosterone and estradiol and progesterone and pregnant alone and thyroid all these are critical for optimal cognition.

And then the third group are nutrients, things like vitamin D. That are critical not only for optimal immune system but for optimal synaptic formation and maintenance. So addressing those is critical and in doing that for someone who's had covid very good idea and getting as you know getting people who have long covid to get their immune systems optimized once again get their adaptive system working, get the decrease in the sight of kinds and the the innate system decrease in their amyloid uh and getting them back on track and then improving their clotting parameters for some, it's going to be a good idea to get on NATO keenness or pick national to reduce those micro thrombin. Especially ones who are genetically predisposed to increase clotting. So getting those things done and then optimizing blood flow all helpful for people who have brain fog.

– Yeah you know what I just think is so important and and hopeful for people is to understand that a this is something that just because you have a problem doesn't mean you're gonna keep getting sicker because all of us are exposed to the same things and we survive, we have lots of inflammation. We have lots of exposure to toxins and it's a question of how much you can do to to balance these things and and to take care of them.

And I just I just want to emphasize because so many people, they feel like when they get a diagnosis that it's a sentence that it's a um not realizing that medical diagnoses are a snapshot in time and you can change what's going to happen by your behaviors and by the things you do. You know and because I I can just you know, one of the issues that I think that happens is when people begin to get um you know long covid or any kind of chronic inflammatory state, anxiety often goes up.

My feeling is that and the brain when it when it is having, when it's stressed the first responses anxiety to try to protect yourself and that unfortunately in our world um often leads to worry and lack of and lack of action and you've laid out um and I just I just think, I mean I know your your first book I think was a great road map to how people can begin to um look through their own systems and get basic nutrients in there.

Um and and and point out to people the same almost of the same nutrients that you recommend are the ones that we have seen can um maybe if not prevent can mitigate a covid infection. I think that's and that can be a real help to people. – Yeah. Dietrich cling heart, I think did a great job.

It's showing you know, all these different things that can mitigate your, your problems associated with covid. Um, and so that you're getting those things optimized like your simple things like vitamin D.

And zinc and things like that. And looking at things that can eradicate this and get minimizing your exposure, all these things. You know, it's interesting you and I learned in medical school about the idea that you make a

diagnosis, you write a prescription or you send the person to surgery.

I mean that those are the options and what we're this is now the era of chronic illness. It's not that simple anymore. It's not one thing, one prescription pad and boom, you're either better or not.

This is now an era in which there are network functions.

Inflammation, Toxins, and Metabolic Support

These things are, this is systems medicine. And so I always think of these problems a little bit like you're, you're taking a car up a hill now, anything that makes that hill steeper is gonna make it harder to get up there and anything that makes it shallower is going to make it easier.

Plus anything that makes your car work better is going to get you over. So what's happening is when you develop long Covid or you develop Alzheimer's any of these chronic problems you've got too steep of a hill and not enough support for your car.

So we're going to decrease that hill steepness by doing the right things and we're going to increase the ability with things like the trophic support and things like that.

So that now, no problem. And what you'll see is it's not going to be overnight, but you'll start seeing people improve and you see this all the time where people will say, gee I noticed yesterday, you know, now for the first time I could do something that I couldn't do the last few years. I was better at navigating or I remembered names better. Um, and then over time people will have just striking improvements where they'll say, wow, you know, one of the, one of the first people who did well and who was in the book, the first survivors of Alzheimer's wrote a beauty story about the fact that her father and grandmother had both died of this. She has the A P.

Four G for a gene alele, which increases risk. And after she had been on treatment for a few months, she went to a, she went to a school and she said, oh my gosh, you know, suddenly I knew everybody's name.

It's like it was something new for her and she just like she was so happy to be there where there was not an issue anymore. So I think that, you know, it's a different way of thinking about medicine than you and I were taught in medical school. – Yeah, we we this has been one of the great frustrations for I think many many patients is that once they enter the world of chronic illness. Um Yeah, they they get very frustrated because you know doctors, you know it's the prescription pad response, you know here take this for the symptom and yeah, I've discussed this often that that that band aid medicine approach is lifesaving but it doesn't get you well when you have a chronic illness. Um so going going back, I just you know like you mentioned a lot of points and one of the things that I'm thinking about is so you kind of you know the basic supplements, you know basic antioxidants and and um you know just things to support the immune system. Um And are there are there particular nutrients that that are high on your list of like what everybody should have or not?

Yeah, for brain fog and and and just just that yeah that that just to lower that early inflammation and get the brain to work a little bit better. So I guess we can use we can use your model and be thinking in terms of okay, what's going to um increase energy and lower inflammation.

– Yeah, absolutely. I mean I think that's a great point now in a perfect world you would actually then go through and you get evaluated and say here are your areas where you need to have that silver buckshot hit.

But if you don't know what your status is with these various trophic supports etcetera, yes, you can do a very good job by looking at critical parameters.

So as you mentioned, start with inflammation. So I really like resolve ins because you know as as has been pointed out in this case, you know what by Charles Searhan who discovered the resolvance um these are not just anti inflammatories, they are resolving the ongoing inflammation which is a prelude then to anti inflammatories. So getting that resolution and then while you're doing that, looking for what's causing it is this is this poor dentition?

Is it a leaky gut? Is it chronic sinusitis? Is it an unknown tick borne illness? You know, what have you? Um That is so critical. So I would you know, start there. Um and then as you indicated beyond anti inflammatories and of course you want to include things like improving your immune system, your vital appropriate vitamin D. Appropriate zinc, appropriate magnesium appropriate omega threes. And let me just make a pitch for omega threes.

There's a really interesting article that came out recently because there's all of this in the literature about locanda mob which is an anti amyloid antibody that is going to be costing billions and if it's approved by Medicare and it's going to increase our Medicare bills for all of us. And if you look at the actual result, it didn't make people better, it didn't keep them the same.

What it did was it slowed the decline very minimally by 27%. Um So on an 18 point scale it changed half a point. Which is people have said it's not even clinically relevant.

Here's what's interesting. Extra virgin olive oil by itself did better than this this billion dollar antibody. So you know and yet they're trying to tell us that this antibody is you know the way to go.

Well wait a minute. How about extra virgin olive oil? So it shows how far off we are with writing a simple single prescription and really having a good impact on someone with Alzheimer's disease.

So again I would get your vitamin D. Optimized. Get your glutathione optimized. Get your vitamin C. Optimized. These things are all critical. Get your omega three to omega six ratio and your omega three index.

Both optimized. We'd like to see you up at 10% for omega three index or greater. Um As is often pointed out we just have way too much omega six around in general for most.

– Just for two things, just under the yeah the omega you can get that. I think omega check is the is the lab tests that will measure the omega index or some labs called the omega checks on the omega index. But the resolve in what I think just talk a little bit about you know where we get the resolve and how how that's coming in through with with fish oils and also just getting them on their own.

– So yeah, it's a really good point and so you can buy resolvance uh you know as as S. P. M. Uh and and and a number of groups make these. Now the first one came out was you know spm active was the first one that came out a couple of years ago. So you can actually get these.

But as you indicated these are close cousins essentially of the omega threes. And it turned out as was identified a few years ago these things were being thrown away in the production of the omega threes. You're throwing away some things that were really critical. So yes, if you take high dose omega three, you are certainly impacting your endogenous resolvance Um so so some people will just stick with that alone and not use resolved.

But one way or the other you want to get that inflammation resolved. Um and then you know, you want to look at what else you can do for you know for energetic um and to and again to optimize your your ability to deal with these infections and to optimize your clotting. So I I think for many people um you know if you can look at your clotting status. Great if not think about some time, especially if you've got long Covid think about uh and I don't know if you prefer, you know NATO keenness, picnic original, You know what Sorts of things you like to use.

Some people like to use lumbrokinase. There are different ways to get at it but certainly something to think about and which has which has been helpful. We had actually Dr.

Anne Hathaway had an interesting patient in the first trial we did that was published just a few months ago and freely available online journal of Alzheimer's disease.

Where we looked at patients who had cognitive decline and saw 84% of them we could improve their cognition and one of them actually did have a hyper koa gullible status with respect to his genetics which again you get a hyper collectible status with covid sometimes often.

Targeted Nutrients and Resolving Inflammation

So this person actually responded quite well to pick the original and tokens with improvements in his cognition. Um And actually interestingly noticed that he had decreases in cognition with things like long plane flights.

Um And by the way I should say that that you know the C. 02 content has also emerged as something that people should be aware of if you're in close quarters. And this was actually was was looked at and published in people uh who were in companies where there was poor ventilation.

Um As the C. 02 starts to get higher. No big no big surprise your cognition is actually getting getting lower. Um So you know be careful about that. So so definitely this combining this, improving the, improving the normal coaguability without hyper coaguability improving your uh system where you're decreasing the innate system and improving the adaptive system supporting that system and then optimizing your energetic.

So you know everything that we like to use for mitochondria. Um And some people like to use things like nicotine amid riverside. Rizveratrol. Some people like N. M. N.

Nicotine amid mono nucleotide instead of nicotine riverside either way increasing your N. A. D. Very helpful resveratrol which is essentially removing an auto inhibition of your 31.

So lots of ways to improve that mitochondrial function. Of course a lot of people like to use coke you interestingly there of course Ubiquitel has been claimed this is so superior but some recent research showed that in fact the ubiquity has just converted to coke you anyway and you're taking it up as co.

Q. So it sounded really good but it's not so clear that it's actually any better to do it that way. Um And then you know appropriate co factors and things like that.

So I think again for most of us and for for those of us who consider ourselves normal we most of us can do better with our cognition by doing the right things by seeing if we have any decrease one of the most common things is oxygen utilization at night.

So you know you can check your apple watch or you can check your or a ring or your Fitbit or whatever and look to see how you're doing with your oxygenation at night.

It's been pointed out that sleep apnea, for example, it goes undiagnosed in the majority of cases. So this is a common contributor that people don't recognize. And then you mentioned the stress earlier, things like just looking at your heart rate variability um and enhancing that, reducing the anxiety, doing some deep breathing, whatever it is that helps you, you know, whether it's forest bathing, whether it's music, whatever what have you, there are so many things that can be done which all contribute to the optimization of this neural plasticity network.

– And I think, you know, we just have to remember that aging is such a inherently um you know, pro inflammatory state that as we, when we're younger, we can get away with a lot, a lot of indiscretions and not realize the damage that's being done because the body is so redundant.

We've got so much extra that we're really blessed and we were only when you start losing, you know, 30 40%. Do we start to really notice that things are changing? – Uh oh go ahead.

– No, no, you go, – No, I was just gonna say that, you know, we, I think again we've, what we've been taught is backward. We've been taught that you know, as you age you just expect yourself not to be so sharp.

That is not the case, there are a lot of sharp 90 and 100 year olds around and I had a recent case where it just, you know, just really showed me how bad this is.

So here's a guy who's smart guy, he's in his seventies, he's a physician and starting to have problems, significant problems. And it was pretty clear that this guy had passed the early stage, the ci and was really late into even

dementia stage, which is really the fourth of four stages, went to his neurologist who said, oh yeah, this is just normal aging. Absolutely not.

That was not normal aging. And that's such a horrible thing to say to someone because it's basically saying there's no treatment to think about here when this guy had was fairly late stage dementia and should absolutely have been on treatment even earlier.

And you know, people will often say, well, you know, don't give people false hope. In fact what's happening is that people are are being given false hopelessness.

And I think that that's a an important term Julie G a woman who is a P 44 who has done very well and founded the website AprilE4.info mentioned false hopelessness.

And I think it's a really important term because we hear so often that you know, we shouldn't give people false hope and yet false hopelessness is far worse when there's actually something that can be done and yet you're telling people, no, this is just normal aging just you know, go home and die.

That's, that's horrible. There is again, so much we can do now. – Yeah, that is the problem with all chronic illnesses that, you know, if there's no 11 like you say, billion dollar drug, um, yeah, there's not much to do or just take a few of those $1 billion drugs sequentially as you suppress the symptoms for a long enough time.

It's, it's, yeah, I, I often rant on on this summit, maybe too much about my frustration with the current medical approach and, and that's why I'm so excited about, um, you know, someone of your training who, who has, um, you know, you made the leap and I'm sure you've seen, I, I don't want to go too far here. But you know, what happens in, you know, the academics approach to your work.

I mean, you know, I am just shocked by how many neurologists act as though, You know, you haven't done anything, You know, you haven't, and it's just mind boggling, you know, how many people do you have to show, get better before they will pay attention, you know, to, and you're showing remarkable changes and all the medicines, all the drugs that they're out there for for, for Alzheimer's that we've been throwing the people for what, 25 30 years now? Something like that can throw at least 20 I've been throwing, you know, have they do almost nothing even in large trials.

And yet your work was – Very important follow up study that was published in Jama actually just about two years ago that showed that the people that actually went on classical medicines for Alzheimer's disease, Aricept Namenda, the classical ones used if you now follow them out five years, they were doing worse than people who weren't treated.

So they weren't just not doing that much better. They were actually doing worse. So, and I do think the medications are going to have a very important role, but when they're targeted as part of this overall strategy, a precision medicine sort of strategy. Now you're going after the actual physiology, the path of physiology of the condition.

Clotting, Mitochondria, and Oxygenation

Now, having a targeted drug is very helpful and by the way, you'll be able to measure their effects better because you will bring these people up into a dynamic range where you can now see the effects of single medicines added or subtracted as it currently stands. We have a floor effect where there's so much problem here that you can throw anything at them and you're not going to see a budge because you're so you've got so many things that are contributing to the problem.

So I do think, you know, there will be a new era once the establishment realizes that hey, this is, this is uh that's the way we need to go for the future.

But you're absolutely right. Um, I was part of that establishment for many years in you know laboratories all over the world and running my own lab for for 30 years sitting on the NIH uh the the the aging council and so forth and

so on.

But as we started to say, wait a minute, this is not the right way to go. We actually have to treat this as a network insufficiency and really hit the whole thing now. Suddenly nobody wants to hear it.

Um I was uninvited to some major television shows where I was going to be interviewed and then I was the writing from the producer was it's considered too radical.

My argument is look look at the outcomes. You know, if you're interested in anything other than outcome then you're really barking up the wrong tree. We simply want to know what's the best we can do for people who have cognitive decline or who are at risk for cognitive decline.

– Yeah, but you know, but you you said it I think the point you made that I just want to amplify is that when you deal with the nutrients, um the infections, the immune dis regulation that's present. Then when you treat um it may be a genetic tendency you might or or or when you can really strengthen one part of the system, you can then see a change. But when the when there's not enough nutrients it doesn't matter what the drug does, it's not going to change the metabolism of the brain enough, it's different. – You know, as an analogy, imagine someone wants to go to the weight room and say, you know what's going to help me strengthen but they're now lying, you know, dying in bed, they have no nutrients there, you know, they have nothing is working in any of their systems.

It really is not gonna help very much to see, you know, should I work out three days a week or four days a week, You know, it doesn't help. You've got to have that support there so that you can now begin to build. And I think again, we're seeing this strategy where, you know, you've got to change the supply, you've got to change the demand and then you've got to build in the resilience and you've got to rebuild what has been lost. And this is where I think things like stem cells are going to be very, very helpful now that you've actually put out the fire now bringing in that next piece and rebuilding those synapses is going to be much easier.

Whereas when you use this as a monotherapy which unfortunately is the way trials are ongoing, it's like you're trying to rebuild a house as it's burning down, it makes no biological sense, you've got to get rid of the problems first.

– Yeah, no, no, we have seen that all the time because, you know, people have done steps and we always tell them you have to deal with the underlying issues.

Then the stem cells may help your body regrow otherwise they're just dissipated. You know and you're not gonna you just. Yeah exactly. It's been one of the most frustrating things to watch.

People waste tremendous amounts of money. Um Because they haven't done they have you haven't shown enough that they haven't you know reinforced the foundations before they try before they try that. That is so important.

So you you're um so for the brain fog you know we kind of covered basically think about the resolve and the nutrients um You know and and making sure I guess one of the things that that even the I said the um the government is looking at is that the fact and the literature showing that there's something about covid infection and what it does to our immune system may be how it's affecting that um uh The C.

D. A. S. And the CD four is the acquired immune system is being dis regulated such that chronic infections are popping up and so we have to like get those down um and just pay attention to them.

Um But once you've once you've done those um uh you know I'm what's the you're seeing the effects of of oxygen of like of just regular exercise. I mean does that begin to play a bigger role? – It does is part and that's part of the energetic party of the four different groups here that is part of the energetic role.

And actually one of the things we've really liked has been what exercise with oxygen therapy because you're in a situation where you're not delivering enough to these distal areas of your brain and so supporting that you know

supporting those energetic with oxygenation very good. Now some people have used instead of used hyperbaric, I like the idea of what it's less expensive but also I like it because it's part of exercise. So you're doing two things at one, you're delivering the oxygen but you're also exercising the body.

The other thing of course are these nice restriction bands that were used by some of the olympians which which again improve flow. So again I think that there are so many parameters that can be optimized that you can really give people better and better outcomes and more and more hope as we go along.

So yeah I I certainly agree that that oxygenation is a common one um and is one that that that tends to be very improveable with you know with the right approach.

– You know, again the thing is frustrating for people is that that often has to be um added in as people are getting better because when you're really not well aerobic activity can often just bite you bite you back.

I mean you have to you have too often maybe start with anaerobic exercise. Me just like a little bit of um lifting or just getting it out of a chair. You know, doing, but but not repetitive, you don't want to, you just have to use those muscles in the beginning.

But as you're getting better, that aerobic exercise seems like a great thing. – This is a good point because too much too quickly could actually push you back the other direction. Uh and we see this with people who try to do too much fasting too quickly where they're frail and they actually get worse.

And so I think I'm glad you brought this up, because there's one of the things that's been interesting to me, I think there hasn't been enough discussion on and I think it is very relevant for people with long covid.

There's something that we've seen repeatedly and I haven't seen a name for it. I've been calling it camelback syndrome because it is, it's the straw that broke the Camel's back. This is often in young people, teenagers, 20somethings, 30somethings who have, they're going along and they seem to be okay, fairly healthy. And then they have typically multiple problems.

They may have stress in their lives. They may have insomnia, it may be traveling, it may be uh tick borne illness. It may be long Covid.

Exercise, Stress, and the Camelback Effect

Um it may be about a depression and suddenly everything falls apart. Their immune system is not working particularly well. They literally can't get out of bed. In fact, I've had people say to me, you know, I couldn't pick my head up off the pillow and the doctors are like well we don't know what this is. It's just somehow you know it's a they all seem to have the chronic fatigue, many of them have some depression, many of them have some some brain fog.

Um And yet the doctors seem to be completely flummoxed by this. They have no idea what this is. And you see this where it's you know, one thing on top of the other on top of the other and as you slowly unwind these and start to deal with each one and improve their immune systems and improve their their depression and improve their gut health and on and on they start to get better.

– No this this is the uh this is the essence of what we talked about all the time is treating chronic illness. It's not a one shot thing. And it's very frustrating as a patient because you know, the training that we've had has been, you know, Americans and is that um you know you go to the doctor and you're going to get the pill, the injection, you know that makes you better.

And this is a process and that can be frustrating because in the beginning the results aren't too quick. But once you, you know, if I said you reach that point when you can start moving again and then this is the more the body knows that you're alive and that the world is a safe place, the quicker the healing, the quicker the healing happens.

Oh before I forget it's gonna mention you talked about C. 02 and that's something I forget about. But you know there there have been um small small studies but you know like especially kids with autism that even like 900 parts per million million which is not a lot of C. 02 can actually trigger you know behavior problems, even seizures and really sensitive people and you can get those levels if you're living in a room that doesn't it's not well ventilated and have a few plants during the night, you can hit some pretty high levels. And so that's not something we talk about often but I'm glad it's just a thing for be aware, you need ventilation, these really tight houses um you know with a gas stove and a tight house and a lot of indoor plants, you are living in a tinderbox for somebody in that house to get really sick.

And in a way that won't make any sense to any doctor you see. – You know, it's such a good point and people never look at this and you know I'm talking about carbon dioxide not carbon monoxide carbon, just talking about carbon dioxide that you breathe off and the thing is that we often forget so much of what we do in our lives is an assumption. It is not the way we were designed evolutionarily to live. We were not designed to live in was the same old food. We were not designed to live in houses made of wood. We were not designed to live in places that had high co two levels were not designed to live in places where the sun didn't shine.

We were designed to be outside most of the time. And so we're you know, we're surprised when we get these toxin exposures and the mycotoxins and the high C.

02. And we become very sensitized to these things. There's a wonderful study um that looked at workers um and looked at the ventilation and looked at their ability to produce and as the ventilation went up, no surprise they did better.

And so again these are things that we tend to take for granted and not realize are so important for optimal function. – Yeah. So talk a little bit about Covid and and Parkinson's because that's another another to me it's another part of that continuum of inflammation in the brain.

But you've done some work there. – So yeah, you know, this is such an important point. So of course we all are familiar with the fact that, you know, 100 years ago with the flu epidemic, there was and interestingly it was not the flu virus itself, it was another virus that has not been identified, thought potentially to be an enterovirus. But whatever it was, many men, Many people in the early 1900s suffered from this sleeping sickness and encephalitis lethargic to where they did get an encephalitis and that they later then developed Parkinson's and of course this was shown in the book and the movie awakenings.

Uh and this was a huge issue. And so so when I was training in neurology post encephalitis, Parkinson's from way back when was still a phenomenon? It's pretty much died out now because people have aged out of it.

But unfortunately now what's happened is we have this increase in toxins and there's a very nice book by Dorsey and others um that is uh that is called ending Parkinson's a prescription for action and I recommend it to people.

Um and they talk about the increased exposure that we all have and actually even looking at people whose homes turned out to be on sites where there was dumping and didn't realize the toxin exposure they had until they developed Parkinson's, so various, especially organic solvents that have been a huge issue.

So both in the toxins and then in the viral infection. So, again, as you mentioned, ongoing inflammation can be a problem. And in fact there were a couple of cases early on in the pandemic where acute covid lead very quickly to parkinsonism. So the concern then was oh my gosh, are we going to see millions more cases of Parkinson's so far, fortunately that has not happened, but of course it's a concern.

So now we are all on the lookout for people who have had Covid we know that there are at increased risk for Alzheimer's. Are they also at increased risk for Parkinson's?

And are we going to see a lot more neurodegenerative disease in the years to come because of the pandemic?

Parkinson's, Public Health, and Prevention

– Well I hope I don't think it will happen, but if if the general medical community would realize that there's um you know that we now live in a world where we need more nutrients because we're living in a more toxic environment and that our food supply has been decimated. Um You know it's it's it's that same problem again is we have more demand and less nutrients.

Um Because if I mean what makes me um a little optimistic is that we've seen with our with our patients. And I've I've been talking doing this series, I've spoken with a good number of practicing clinicians who have seen a lot of covid in their patients and what's interesting in the people even though they're treating people with chronic illness.

But because they have them um you know what what I guess conventional message considered high doses of nutrients but still reasonable, reasonable amounts of nutrients.

They have not seen much long covid in their own patients and that's been our experience to most of the long covid patients we see are people who um you know I didn't think they were sick before. You know and our patients were were and they still are very afraid of developing long covid. But it's interesting even though their immune systems are not acting perfectly with the amount of nutrients they have on board seems to mitigate this. I hope it's true.

I mean it's been our experience, but again, you know, it's only anecdotal but it looks positive that if you take care of yourself um you know, we're all going to get something, nobody gets out alive, but you know, we might do much much better if we take care of ourselves. Um and and and through through this whole series it keeps coming down there. We talk about a lot of fancy therapies and a lot of big things, but it's sleep, sunlight, nutrients and activity. Um You know, that seems to be the basics, you know, and and and and probably most important is um that place of of safety of having, you know, a little sense of love and community which seems to be another another missing part in our in our evolving culture.

– You know, it's so interesting to me in the last century, the major success of medicine against illness was to combine antibiotics with public health measures to reduce so many deaths from infectious illnesses.

So public health played a big role with cleaner water and things like that. What's happening in this century, we need to again go back to public health measures to improve things like the food supply, reduce the toxin exposure and to get people who to get people to basically come in for prevention or earliest treatment.

And here's an example. We can now look at you and say, you know what is your risk for? Alzheimer's based on your genetics, based on your biochemistry, your epigenetic. And we can do a lot to make sure you never get it basically. Alzheimer's is becoming optional.

That's hard to believe but that's where things are with understanding what's driving this problem. Now with Parkinson's again, public health measures reducing the exposure to toxins. But interestingly if people have three different symptoms, these are the things that precede the severe problems with Parkinson's, the motor changes. So number one people who develop loss of smell and as mia. Number two constipation and number three rem behavioral disturbance, R. B. D. And this is the most specific.

And so these are people who now fling their arms and legs typically while they are dreaming and often their spouse will know about this and you know have to sleep in a different different room because of this for anyone who has that triad.

Please do not wait, go in, get checked to see if you are in the earliest throws because you can have the rem behavioral disturbance, one year, five years, even 10 or 15 years before you get the significant motor symptoms that are so damaging in Parkinson's. So again we could do a lot to prevent this illness by getting people on optimized treatment long before they have the most severe problems. The good news about the chronic illnesses is they are affecting us for many years before we get major symptoms.

So if we know what to look for and we are diligent in public health measures, we can actually prevent a lot of these problems. Yeah. – I mean I just. Yes. Yes. Yes. Yes.

And I I shouldn't go here. But I have to just because you press the button. You know, we should only do the same thing with the cardiovascular disease and realize that this cholesterol is a is a response to inflammation.

It's not just because you eat too much whatever you know it's and you know suppressing it. Yeah the numbers get better. But we could we could prevent the rest of the diseases that go along with the high cholesterol if we actually treated the underlying issues. But – And I completely agree with you there.

You know this has been something that I've been interested in lately that we're leaving the era of knee jerk to pathology. So we say, oh amyloid must be bad, must be causing Alzheimer's let's get rid of that.

It doesn't help. We say cholesterol. Oh that's the problem that must be causing the problem. And as you said, no it's a response to the problem. We hear the same thing now with things like uh you know the bleeding in macular degeneration.

Oh that's the problem. Well no. The problem is why you develop the macular degeneration to begin with. And now we have the same thing with cinephiles in asthma.

Oh, you know it's the essentials that are the bad guys. Well wait a minute. Why are they there? So I think we're leaving that era and going to again a precision medicine era where we can say what's actually causing the problem that leads you to make more cholesterol, more amyloid, Moriah, cinephiles, et cetera. That gives you much better clinical outcomes.

– We need a lot more researchers um like you who were physicians who understand the broad spectrum because I talked to so many researchers and their um it's just the issue of research in America today or everywhere is that unless you go deep deep deep into some miniscule detail, it's hard to get published and it's hard to keep your your academic, you know, um placement and we need people with broad under because you say this is a network problem. This is not an issue of one molecule.

You know. So um anyway, I we're supposed to be talking about long covid but I I just I just think that having a chance to talk to you is always so exciting because you know, I said I'm just so impressed to find people who um you know been deep in the research and have come back out to sea like oh my God, we have a lot that has to be taken care of. Not just one detail because, you know, I mean, your experience, I'm sure in training was aiming you to a more and more narrow view, a more and more narrow question to explore.

Closing Thoughts on Precision Medicine

And luckily – That was what we set up the lab to do. Look at what causes the neurodegenerative phenomenon. You know, why is this such a problem? Why is this so common?

Why have we been so unsuccessful? And you know, I can't ignore what the research showed us, which is that this is a problem with many things. And interestingly, my wife, who's a family practitioner told me years ago, an integrated physician told me, you know, early on in our research, she said, you know, whatever you guys come up with in the lab, it's gonna have something to do with basic things like sleep and stress And in nutrition.

And I said, No, no, no, no, we're gonna find one molecule one fold and we're gonna find a drug that is gonna be uh it's gonna interact with that fold and we're gonna cure these diseases. And of course I should have listened to her 25 years ago, we would have gotten to where we finally are um, you know, much, much quicker. – Yeah. Well, you got to get that message out to more of the of the researchers because unfortunately 98% of research in America is still looking for that one misfolded protein that they're gonna fix has to give way to.

And like, as you said, it has a place because sometimes that will be the key, but not for public health. And thank you again for mentioning public health because covid has, I think given the public health a bad name because many people have felt, you know, one way or the other about the government's response, but public health is not, I mean like, and you said it was cleaning up the water supply, you know, I mean good sanitation, that's important.

And now we've got to do the same thing with the rest of our environment to keep us well, so well, thank you so much. Thank you so much for your time and your wisdom and um, I just want people to make sure, you know, I think your your book was amazing.

The articles are great for people who want to do a deeper dive. But um, I mean, but I have your book, I have several copies of your book, but I don't remember the exact title of of that first book was? – The first book was the end of Alzheimer's. Um, and it's available now in 33 languages.

So it's easy to find. And we have articles published online that are freely available as well. – Yeah, but it was so important. I think in your book was how clearly you laid out steps that everyone can take. You know, you don't, you don't have to go see a doctor. I mean, you know, it's nice to have a doctor working with you and it's always a good idea, but just right off the bat you can do a lot of those simple things and and and and that can be life changing. So I do recommend it highly.

So again, thank you Dr. Bredesen it's a pleasure. – Thanks Dr. Gordon Great, talking with you. Take care.