Your Brain on Fire? How to Prevent Alzheimer's & Boost Your Brain Health! Transcript

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Introduction to Brain Span and Early Prevention

The big problem… You know, imagine that you're trying to help people with cancer, and you tell everybody, don't come in until you have widely metastatic cancer.

That's basically what dementia is. It's widely spread Alzheimer's. So catch it early, really when it's pre-Alzheimer's. You never have to worry about it.

There's so much that can be done. We see positive outcomes again and again and again. This is Doctor Talks, real talk from real doctors on the issues that matter to you most.

Well, it is such an honor to have Dr. Del Bredesen with us today. Welcome, Dr. Bredesen. Thanks so much, Dr. Osmond. Thank you for having me. Oh, I can't thank you enough.

I've been following you for about 20 years when it was the Bredesen Protocol. Dr. Bredesen is an internationally recognized expert in neurodegenerative diseases.

Importantly, he is curious, he is brave, he is discerning, and he is a purveyor of hope. And as you all know, in the world of degenerative disease, that's pretty rare.

And I was so impressed. Dr. I've read everything you've written, Dr. Bredesen and love your new book, The Ageless Brain. Everybody in our life will get this as a gift because we want to get old with the people we love and we want to get to enjoy these relationships.

So I kind of want to start in the area of relationships. Your book, of course, is sciency. It's very strategic. It's robust with personal stories, things you have seen in your practice.

But I was very touched, Dr. Bredesen, by your tenderness, your relational tenderness. You talked about that nothing in your life would be more fulfilling than to reach 100 with your beautiful and brilliant wife, Ida.

And I thought that was that's the essence of it, right? I mean, yeah, we expand our relationships. Well, you know, so the big problem and the reason I wrote the book was we've been studying Alzheimer's, but this is much more than just Alzheimer's.

This is about how our brains age. And unfortunately for so many people, their lifespan, whatever that may be, whether it's 80, 90, 100, what have you, their brain span is shorter so that they may have months or years or even a decade where they're just not all there.

We all see it. And in fact, it's so common that people will say, well, you're just getting a little older. Your brain doesn't work the way it used to.

And what our research showed is it doesn't have to be that way. So if you look early, we recommend everyone who's over 35 think about getting evaluated, getting on active prevention of cognitive decline.

And virtually everyone can get to be a ripe old age and do very, very well with their cognition. And we see it again and again in people who've had issues or people who have avoided, even though they have a genetic predisposition.

So as you indicated, relationships are so critical with your children, with your spouse, with your extended families,

et cetera, with your friends, all of these things.

And there's no question that these are impacted by changes in the brain. People become more irritable, more forgetful, they have more arguments. We've had a few people where they would actually hit their spouse, something they would never have done before, but they've lost that control.

so that avoiding that and keeping people's cognition optimal is such a critical thing. And now we understand it so much better than we did even a few years ago.

There are new tools as well, new blood tests, new treatment approaches, personalized medicine, all these things that weren't there a few years ago that can help people to have optimal brain spans.

I love that brain span. You know, in my TED talk, I talked about health span, lifespan, but then vitality span because of the TED podcast. But brain span is actually the best term, I think, Dr.

What a Cognoscopy Includes

Bredesen, because it encompasses, you know, every single thing and anything we do for our brains is going to help all the other areas. In your book, you coined a term, cognoscopy.

kind of like a colonoscopy. Now, colonoscopies, I think that age has been dropped to 40, but it was 50 historically. But you're saying 35 for this, I love that term, cognoscopy.

What would that entail for the average person? Yeah, that's a great point. And we, we look at this very much based on the scientific evidence, what's been shown, you know, when do you have changes?

But when I wrote this, everyone should start at 35, just as again, you know, as you said, you know, if you're, if you're 40, when I was younger, when I turned 50, many years ago, it was said when you turn 50, get a colonoscopy.

As you said, you should probably do it at 40. But what we've, what has just been published recently is that there are changes that you can pick up. of what will become Alzheimer's down the road at 25, which is a surprise.

When I was training in neurology, we never saw people. It was a disease of the 60s, 70s, 80s, 90s. Many people called it old-timers disease. Now we know that it starts many years before you have a diagnosis.

Now we have very good blood tests. You can pick it up just like when people first measured hemoglobin A1c. You can pick it up when you're headed for diabetes before you ever have diabetes so that you can prevent the changes, the blindness, the kidney failure, the vascular disease.

The same is now true for cognitive decline. You can pick things up much earlier and make sure that you never have that problem. So as you said, you want to get a cognoscopy, and we recommend basically two pieces.

One is you want to know if you have any changes in your brain for the first time, and it's just come out in the last months. You can look inside your brain without doing a PET scan or an MRI, just with a blood test.

And it measures three different things. One is called p-tau-217, which is a molecule which changes as we respond to insults to our brain. So, and that one will tell you if you're on your way to Alzheimer's in the future.

So again, you can do something about it. You don't have to get to the point of having dementia. The second one is called GFAP. That's glial fibrillary occipital protein.

And that is one from your astrocytes, which tells you, do you have ongoing inflammation and attempted repair? in your brain, and that can be from anything.

It can be from Alzheimer's, it can be from a traffic accident, it can be from playing football, it can be from COVID, it can be from lots of things. And then the last one is called NFL, neurofilament light, and that is specifically for neurons, but for any disease that damages the neurons, the specific brain cells that are having the synapses and connecting.

So that's really helpful. That's the why. And you could even see that if you go to get a brain scan, we call this the brain scan. because even though it's a blood test and I just had mine checked a few months ago, I'm happy to see that it's normal.

So I'll check it again. If you're under 60, you want to get it every five years. If you're over 60, you want to get it every two years just to make sure so that you can see things coming.

So, but you don't have to get it very often. And then the second piece is you want to know why. What are your risk factors? And those are called recode labs.

And there you want to know, do you have any ongoing inflammation, things like HSCRP? Do you have a poor methylation with a high homocysteine, for example?

Do you have heavy metals that are a problem that are giving you toxicity? When you look at the things that limit your brain span, They fall into three major groups.

It's reduced energetics, so reduced support, reduced blood flow, reduced oxygenation, people who have sleep apnea, huge issue, reduced mitochondrial function, you know, the batteries of the cell, those sorts of things.

And then it's increase in inflammation, things like Changes in your oral microbiome, P. gingivalis, T. denticola, the things you are very well aware of.

And then it's toxic, toxicity, things like mercury and things like air pollution and even microplastics and things like that have turned out to be an issue.

So those are the big three. And so with the cognoscopy, all it is is those blood tests. And then you want to do a simple online free cognitive assessment.

And you can actually, if you go to My CQ Test, CQ is for cognitive quotient, My CQ Test, you can take a free, it's about a 20 minute or so online cognitive assessment.

And then if you have symptoms or if you are scoring poorly on the test, the third piece is you'll want to have an MRI with volume metrics. So many people don't use the volumetrics, unfortunately, but it's an important thing to do and you want to include that.

But if you don't have symptoms, don't worry, you don't need to do that. That's totally optional. And that's how simple it is. Not to say it's much more pleasant than having a colonoscopy.

Having had both of them, I can tell you that for sure. And so this will tell you a lot and really will save a lot of grains. I hear all the time, I just heard another one yesterday from a guy, very sharp, doing very well, functioning very well, but he had Alzheimer's in his family.

So he bothered to check his, his colonoscopy or his, uh, cognoscopy and he found that there were some abnormalities. So, okay, no, don't worry about it.

Like never before we can address these things. And again, dementia should now be a rare condition. The big problem, you know, imagine that you're trying to help people with cancer.

and you tell everybody, don't come in until you have widely metastatic cancer. That's basically what dementia is. It's widely spread Alzheimer's. So catch it early, really when it's pre-Alzheimer's.

You never have to worry about it. There's so much that can be done. We see positive outcomes again and again and again. In our trial where we actually had people who were relatively in the later stages in what's called MCI and early dementia, 84% of those people improve.

And we also just published recently sustained improvement for over a decade in some people. So this, again, this is an era when we should be able to make dementia a rare problem.

In the past, it was an issue because people waited so long. Well, when people think it's inevitable, they ignore it. And as you say in your book, it's just so easy to not, not pay attention to any symptoms in yourself or in your loved ones.

But, you know, as I told you off camera, we have a recode, certified cardiologist here in Oklahoma.

The 36 Holes in the Roof Framework

And it's like seeing people improve. And there's nothing more exciting for the person when they see themselves improve. But I think, you know, we're still in the dark ages and in too many areas where we say, Oh, I don't want to see until you're sick or I don't want to.

know, will this worry about those symptoms when they show themselves? Dr. Bredesen, what do you find to be the boogeyman when it comes to what people are generally doing in their life that they don't know how much is hurting their brains?

Such a good point. And I think that the Boogeyman is really that we've all grown up in a society where it's standard to eat a high carbohydrate diet, to have some metabolic syndrome.

Over a hundred million Americans have some degree of metabolic syndrome. That is a big player in cognitive decline. One of the major reasons for cognitive aging It's typical to grow up and not worry about sleep apnea.

Even if you start having problems, as has been pointed out, about 80% of sleep apnea in this country goes undiagnosed. So that's another big boogie man.

Again, it's common for people not to check their oral DNA. Very simple to do. Very, very important. It's common not to worry. In fact, we've been told, don't worry about those dental amalgams just because they've got mercury in them.

Well, actually that can be a problem. It's common to eat fish that are big, long live, large mouth fish that are full of mercury. Unfortunately, now it's turning out to be common that so many of us have a lot of microplastics.

It turns out, unfortunately, they are concentrated in the brain, more so than the kidney, more so than the liver. They have been associated with cognitive decline.

It's still not clear what's cause, what's effect, or whether it's both, in fact. But in any case, that is a looming concern. So overall, it's common to have a lifestyle that is high in toxicity, air pollution, mercury, all these things, that is poor in energetics, too much sugar, insulin resistance, inability to be metabolically flexible and to get into ketosis when you need to, leaky gut, all those things.

and then to live in a situation where there's chronic inflammation. In fact, that's so common. Aging has been called inflammation, as you know, because it's such a common player.

And so I think where my colleagues and I have gone off the rails for years in the past to say, you know, what is Alzheimer's? Everyone was looking for one solution, you know, silver bullet.

Oh, it's about a misfolded protein. It's about amyloid. And it just turns out it's just not that simple. What are research? We spent 30 years in the lab looking at how, what are the drivers, the molecular drivers of this process?

And when you do that, what you see is that ultimately cognitive aging is about a network insufficiency. Not enough blood flow or oxygenation or mitochondrial function, too much inflammation, too much drag, too much toxicity.

Those are the big three. And then we do have a more modest three, which are neurotrophins, things that support the brain, hormones, nutrients, BDNF, NGF, things like that.

neurotransmitters, things like acetylcholine. So many Americans are low in their choline intake. You should have about 550 milligrams per day. And for many of us, it's more like 300 or 400. You need that to make the neurotransmitter acetylcholine, which is very important for memory.

And then the final one, which really surprised me as a lifelong academic scientist, someone who never thought that stress was an issue, I can't deny it.

The data are very clear. It's not acute stress with resolution. We're kind of made evolutionarily to handle that. It's that chronic stress that so many people are exposed to.

It's already been shown that is associated with brain atrophy. and it is also associated with cognitive decline. So those are the big three and the middle three that are the players, that are the ones that affect so many of us.

And again, I see it all the time that most people will have several contributors. So they may have some metabolic syndrome, they may have some sleep apnea, they may have some hypertension, they may have some oral microbiome changes, and some, you know, some inflammation overall.

They may have a leaky gut. When we address those things, and the great news is we have the ability to address every single one of these things. When you address those things, people get better.

And we see it again and again and again. Well, the, uh, the cardiologist here in Oklahoma city who is recode certified, you know, really trains people well in your protocol to repair holes in the roof.

Yeah. And that is such a tangible way for people to look at it, Dr. Bredesen. So I'll have people come in and they'll say, okay, Dr. Debbie, I've got this hole, this hole, this hole, and here I'm, you're, you're going to help me with this hole.

And so just. expand on that excellent analogy because it gives people a word picture. And it also is so empowering, which, which folks, this book, this book is going to give you hope.

It is going to give you a place to start. It's going to give you encouragement. And I think seeing it as, okay, we're going to work on this next. Yeah, it's a great point.

So years ago, we were looking at the molecules. We were looking at the APP that gives you the amyloid. And we were looking at P75 and NF kappa B and DCC, all these molecules.

Very interesting. And what we found is that pattern was that this is, as I said earlier, a network insufficiency. And so we thought, OK, let's look at all the things that say, because we were trying to develop a drug years ago.

And actually, we identified some that had impact in some areas. But what we found is there are too many. It's a bit of a problem where what's happening is that you've got all these different pathways to the impact this, what ultimately is cognitive decline.

And so therefore, so first of all, I sat down and wrote out every single one of these mechanisms and it turned out there were 36. So I said, okay, this is a little bit like having 36 holes in the roof.

So you wanna patch all the holes. A drug is an excellent patch for one hole, but what about the other 35?

KetoFlex 12-3 and Metabolic Flexibility

So, so you've got to really, so that's why I started saying to people, look, you got to patch the holes in the roof and just take one at a time. The great news is when you've patched several of them, often the other ones will just slam shut because you're now kind of on the right side of that.

So that's the idea of the 36 holes in the roof and people really can pick that up easily and say, we get it. Talk about the 12-3 plan in the book in terms of a ketogenic diet.

I appreciate that it's very user friendly, the way you present it. So tell our readers about 12-3 and then please touch on insulin degrading enzyme. I think that is really, really important to give people another piece of their why they want to eat it.

Yeah, great point. So the idea of the KetoFlex 12-3, so if you look at what happens with the driving, the cognitive decline, and what you can do about it, then what you find is that there are the seven, what we call the seven basics, diet, exercise, sleep, stress, brain training, detox, and some targeted supplements.

And then there are the two specifics, are there specific chronic infections to go after, and are there specific toxins to go after. That approach, looking at all those 36 holes, all those different groups of things, really helps the vast majority of people, especially if you don't wait until late stages to start.

And so KetoFlex 12.3 is the idea is that you want to become metabolically flexible, so you want to be able to go back and forth between burning glucose and burning ketones.

And the way to do that is to have a fasting period at night of 12 to 16 hours. So for example, if you finish your last meal at 7 PM, you should wait till 7 AM.

It gives your brain a chance to go into autophagy to clean itself. Basically your brain is cleaning itself at night. And you have to be able to go back and forth.

You want to be able to burn glucose or ketones. Our brains, as you know, are like a Prius. They can burn two things, but instead of electricity and gasoline, what this is doing is glucose or ketones.

And so what happens for so many of us, when we become insulin resistant, our insulin starts to go up because it has to deal with the fact that you have some resistance to the signaling of the insulin.

Now what that does is the high insulin, number one, you've got a poor response to it, so you're not able to burn glucose very well. But number two, that high insulin prevents your body from making the ketones it needs.

So now you're really sputtering. You don't have either. Again, it's like a Prius that's low on both fuel and electricity. You're not going to get very far.

And that's what I see people with cognitive decline Virtually all of them have some degree of reduction in energetic support. And so we get a lot of great things from KetoFlex 12.3. And in fact, they now, Trifecta has worked with us to make meals available.

You can actually get this, see for yourself. You can actually see what will help to drive you into that mildly, it's a plant-rich, mildly ketogenic diet.

And what you do with this is, This will give you high phytonutrients, high fiber, which helps you to detox, improves your gut microbiome. It will give you a low carb diet.

It's good fats diet as opposed to bad fats. It's an anti-inflammatory diet. So these things are all there and really do help people to get cognitive improvement.

In fact, one of the nutritionists here is who's involved with our ongoing randomized controlled trial at six different sites around the country. She's known for her ability to get people into that state really quickly, really well.

And these people just notice and approve like, wow, more energy, better thinking, better sharpness, et cetera, better memory, all these sorts of things.

So that KetoFlex 12.3 is the associated nutrition that has done the best so far, better than any other diet in terms of actually boosting your cognitive abilities.

And then you mentioned IDE. So IDE is an enzyme that your body makes. It's called insulin degrading enzyme, IDE, as you mentioned. And you make this to degrade.

So after you have insulin, obviously you don't want to keep your insulin around because you'll become hypoglycemic. Having a lot of hypoglycemia, which is very common, is also damaging to your brain.

So you want to have the insulin, you want it to do its job, and then you want to degrade it quickly with your IDE. Well, guess what else IDE degrades?

It also degrades amyloid, the amyloid that is associated with Alzheimer's disease. So when it's there with these high insulins, it's constantly at work, it cannot do its job to degrade the amyloid.

And that's one reason that many people believe, one mechanism that many people believe is the reason that that one of the contributors to this increased amount of amyloid.

And I should say, the amyloid that you see in the brains that characterizes Alzheimer's disease has always been seen as the bad actor, the thing that gives you Alzheimer's.

But increasingly what the research shows is the opposite. It's the response to the insults that are damaging your brain. So for example, if you start to get some periodontitis and you have P.

gingivalis, an association with that periodontitis, lots of research now showing P. gingivalis in the brain is associated with cognitive decline. So what does your brain do?

It now is going to activate the immune system. Now, we think about the immune system as innate immune system and as the adaptive immune system. But before either of those, you have barrier function.

So your skin, very good barrier. Your cerumen in your ear is an antimicrobial barrier. And what we now believe is that that amyloid is laid down originally as a non-inflammatory barrier.

So as long as you can deal with small amounts of herpes simplex from your lip or a P. gingivalis or T. denticola or other pathogens, You can do very well, and that's what's been shown.

You can live 20, 30 or more years with good cognition despite the amyloid. It's when that's not enough, you're exceeding the barriers, continued exposure, for example, that you now have to bring in the inflammatory.

Now you bring in your microglia, you bring in your mast cells, you bring in your cytokines.

Vitamin D, Oral Health, and Brain Risk

That's what's associated with cognitive decline. So as long as it's very little and you can handle it, that does fairly well. So again, the degrading your amyloid over time, if it's starting to bring in those bigger players of the cytokines and stuff, is not good for you.

So as the amyloid increases, it potentially gets more inflammatory, and that's why we need the insulin degrading enzyme to keep it more at bay. And then as far as the ketoflux 12-3, so for our listeners, you want to make sure that you have 12 hours of not eating between meals at night, at least 12 hours, maybe 16. You also want to not eat three hours before bedtime.

which is key just to give your, you know, your body a rest. So I wanted to make sure I clarified that. Also, so Dr. Bredesen, as far as those tropic factors, one thing you mentioned in your book is vitamin D.

Please expand for our listeners because that's something I find consistently low in people who are not intentionally increasing it. Such an important point.

And by the way, as you know, the research has been published by the epidemiologist showing that people who are low in vitamin D have an increased risk for cognitive decline.

So it's yet another factor. And many of us, especially because we live indoors and we may not be going out much during the wintertime, our vitamin D can be very, very low.

And so, you know, when we were cave people years and years ago, you're out there foraging, you're getting a lot of sun exposure, you're getting a lot of vitamin D.

So we're not really made to have these very low vitamin D levels. Now vitamin D is a fascinating nutrient. It is really more of a hormone. It binds to the vitamin D receptor.

It's a little bit like estradiol or thyroid. It binds to a receptor, which then enters the nucleus of your cell and impacts about 700 different genes.

So it's literally changing the programming of your cells. And interestingly, it's changing it to reduce inflammation, to reduce likelihood of cardiovascular disease, to increase brain connection.

So your connectivity goes up with this. So it really has a remarkable impact on cellular function. not just on your bones, but on other things as well, including cognition.

And for anyone taking a thousand units or more per day, you should also make sure to take some vitamin K2, a hundred micrograms. You don't need very much at all.

So I usually just get the combination. You can get D with K2, easy. And that works very well for most people. It sure does. Vitamin D was the first area that got me interested in the whole integrative medicine field, Dr.

Bredesen, probably 25, 30 years ago, when a patient just had these spongy weird gums and she was doing all her home care, but it ended up that her vitamin D was in the tank.

And she had an astute physician who figured that out. So it really impacts periodontal health. You're the first physician that I ever heard speak about porphyromonas gingivalis.

I think it was probably that 2012 study that was so key with those 20 different cadavers or, you know, postmortem brains. And so I really thank you for that.

In my current clinical practice and research, I see that fusobacterium nucleotum, which is a less You know, we just sort of have, I've blown, I blew it off for years, not thinking it was that big of a deal.

But now we know that it's a major player with cognitive decline because it sort of encourages P. gingivalis and trypanema denticola, these other pathogens that you mentioned, to be worse.

What are you finding in your current research in that area? So yeah, so when we look at the oral contributions, as you know, the oral contributions to cognition are huge.

You could argue that that is the most important area when you're looking at cognition because it has to do with sleep apnea and airway restriction, upper airway resistance syndrome, all those.

It has to do with your mercury status. It has to do with your microbiome status. It has to do with your ongoing

inflammation status. It has to do with all these different things that are critical.

You mentioned, you know, gingivitis, periodontitis, and these different organisms, whether it's, you know, F. nucleotum that you just mentioned, Privatella intermediate, T.

denticola, P. gingivitis, just go right down the list. So yes, what we find is that people who have these increased pathogens do have an increased risk, and this has been noted previously by others, do have an increased risk for cognitive decline and improving those.

The great news is there are now rinses, things like Stella Life and dental Sidon and things like that, and probiotic and toothpaste and things like that, that can improve your oral microbiome.

And the big surprise to me was the research on the brain microbiome itself. I was always taught in my training the brain should be a sterile organism.

It certainly makes sense. We thought, look, if it's not sterile, you have meningitis or encephalitis. You can't have a non-sterile brain. But it turns out that is not the case.

Just like in your gut, there is a brain microbiome. And the surprise to me was that much of the brain microbiome is reflective of the oral microbiome.

So there does seem to be more communication there. than we understood in the past. And so optimizing that, not overwhelming the brain and not overwhelming it with pathogens like P.

gingivalis and F. nucleatum. And as I recall, isn't F. nucleatum the one that was also implicated recently in cancer as well? I'm Dr. Bredesen. You know, my patients are physician referrals, so I see a lot of colorectal cancer.

And so far, 100% of patients with colorectal cancer have F. nucleotum present on their GI map higher than optimal levels. I've sort of argued with GI map about their reference ranges because I'm seeing problems at the sixth power.

Their reference range is the eighth power. I love the GI map. It's a great test. But nevertheless, this is an oral bacteria, you know, folks that translocates to the gut.

and actually it's found in a good 30-40 percent the numbers going up of colorectal tumors. We don't know if it's fertilizer for that tumor. A lot of people think it's sort of causative.

After I did my TED talk with Dr. Bredesen, I got a big email from a researcher in Europe who said, Debbie, this is causative, and you're going to believe me in 10 years.

Gut Health, Constipation, and Cognitive Symptoms

That was about 2017, 18. So I think it is a huge player. What's been interesting to me, Dr. Bredesen, is that brain fog is on my health history now, which it never was.

It wasn't on my health history 15 years ago. And it gets better when fusobacterium nucleotum decreases. I think we all have to remember that your, your oral cavity is not Las Vegas.

What happens there doesn't stay there. It's going on in your brain. It's going on in your colon. It's going on in your gut. It's going on in your sinuses.

So it's going on in your lymph nodes. So that the bottom line is, you know, this is not Las Vegas here. There's a systemic relationship between the mouth and I think people, you know, we've got doctors and dentists that are so separate and really they need to be working together much more because these things are impacting each other.

One of the things we found in our clinical trial is that a number of people on cone beam analysis had occult abscesses that wouldn't have been picked up otherwise that were causing clear inflammation and impacting their cognition.

So treating those was very helpful. So again, the relationship is very important. Yes, we see it all the time. And oh my goodness, my just anecdotal stories of my patients who call me and say, Debbie, I'm back.

I can drive again. Debbie, my brain fog is gone. My sinus infections are gone. I'm pooping every day. I mean, it's crazy, Dr. Bredesen. just the, the simple things, you know, this one of your holes in the roof and you've been, you've been paying attention to this for years.

And I sincerely thank you for that because I remember when I first read about you and what you were doing because you're, you're odd, you know, you're, you're very odd.

And I say that and with the highest respect because we need more odd doctors who are willing to ask questions and who are willing to get outside status quo.

I wondered what you might see clinically or just with your what people report in terms of of constipation, diarrhea, you know, gastrointestinal issues as, you know, in terms of memory loss.

I guess I want to preface this with too many people think that constipation is normal and they don't need to be having a bowel movement every day. So speak to this because I want our listeners to hear the truth.

Yeah. And let me just say something about being odd. So I spent my whole career as a professor in an academic center. And I went through Caltech, MIT, Harvard, Duke, UCSF, all these places to be trained.

So I had a very classical career. But what happened was our research showed us over the years that we have to quit thinking of a silver bullet. And we need to be thinking about silver buckshot.

I mean, no surprise, the human brain is complicated. So you've got all these things working together. And so you've got to look at the different ones.

If you're going to get that whole system to work well for your entire life, you can't ignore these various things. And I would say one of the most important things for people to understand is before you get the dementia of Alzheimer's, you go through four phases.

You have a period. where you are pre-symptomatic, where you can already pick things up in blood tests and say, oh, you're headed for something, but it may be 20 years down the road.

This is why we encourage everyone, if you're 35 or over, please get evaluated, get a cognoscopy, check things out and get on active prevention. Very few people ever need to get dementia.

If you don't do anything, you go into the second phase, which is called SCI, Subjective Cognitive Impairment. And when you do that, that means by definition, you know something's not quite right.

And so many of us will say, gee, I can't remember phone numbers the way I used to. I may not be able to remember easily the instructions that I got, for example, for driving to place X.

And of course, now most people will use their iPhone or something like that. But things like that, they may not be able to. Do things like, you know, remember, oh, where did I park?

Things like that. These are issues, and they should, you should notice them. But during that SCI phase, which may last 10 years, you can still, you're still able to score normally if you take a cognitive test.

Now, the third phase is called MCI, mild cognitive impairment. And what that means is that you're now scoring

abnormally on cognitive tests, but you're still fine with your activities of daily living.

You could take care of yourself. You can balance your checkbook, things like that. It's only when you get to that fourth dementia that there's a real problem.

So again, this is where I think it's so, so important. Don't ignore it. The doctors, unfortunately, will hurt you by saying, oh, you're just getting a little older.

No, that's the time to jump in there. And as you mentioned, people will notice, oh my gosh, I just function better. My weight is better. We hear this all the time.

I no longer need antihypertensives. I no longer need metformin for my high blood sugar. I no longer need a statin. My lipid numbers are better because you are now doing the right set of things.

And we had one person, as you mentioned, the gut. This is one of the most common contributors, and people don't look at that enough. One person that I got approached by several years ago, very famous celebrity who was having a number of things and found out her genetics were not good for the potential and said, you know, I'm not having problems yet, but I'm concerned about this.

One of the many things that was identified was her magnesium was low. And so just optimizing the magnesium, because she had had constipation for many years, 20 year problem, gone.

So these things, people don't realize, you know, that as we're in our 20s, 30s, 40s, 50s, things are not quite working optimally. And just addressing these basics really, really helps people.

And as you mentioned, you'll hear this all the time. Wow, I'm sharper than I've been. I've got more energy. I hear this all the time. People say they're more engaged with the family.

They're more energetic. They just can go and go and go. Dr. Anne Hathaway, who's one of the doctors in the trial, did a fantastic job. She had one guy who had, you know, he had MCI, significant cognitive issues.

He did great, but he got his ketones so high that he was saying, you know, I'm so revved up and able to do everything that I don't want to go to sleep at night.

So then you can dial down a little bit on that. Obviously you want to go back and forth. One of the things that was really intriguing to me on the scientific side is that what we found is just like you go sleep, wakefulness, sleep, wakefulness, and this impacts your hormones.

and it impacts your breathing and it impacts your temperature, all these things, as you go back and forth between sleep and wakefulness. So you have two modes.

Each one is very good at one thing, but you're not going to do well on a test when you're sleeping. But when you're awake, you're not going to do well at healing things the way you do and detoxing the way you do when you're asleep.

And especially with sleep, you want to get that hour of deep sleep so that you can detox better, an hour and a half of REM sleep to help with your memory, seven hours of total sleep at least.

And then you want to have a oxygen saturation during that time of at least 94%. So sleep, huge issue all by itself.

Neuroplasticity, Hope, and Cost of Prevention

So all of these things are critical. And I think, you know, wearables are one of the things that's really going to help us because we're picking up things earlier and we can see when things are a problem.

So all of these things are critical. And, and, you know, I was mentioning before that the ketones. So what we find is you go back and forth sleep and wakefulness.

Well, it turns out also you go back and forth between connection and protection. When your brain is doing well, it's not inflamed, you don't have major problems with your microbiome and your oral microbiome, et cetera, you're very good at learning new things.

And everybody notices this. You stay up all night, you have a lot of stress, things like that, your memory's not as good. You go from a connection mode to a protection mode.

And when people are getting Alzheimer's, they are in a chronic protection mode. They are dealing with all of these insults. And we have to get them back into the connection mode, getting rid of those insults, minimizing that, reducing that inflammation, decreasing the toxicity, getting you to be insulin sensitive, all those things.

Getting your vitamin D to be optimal, your hormones to be optimal, your trophic support, your oxygenation, your mitochondria. This system works. It's like a finely honed machine.

When you do that, you now flip back into connection mode. And you can, it's amazing, you can go down, there's a change in your ability to clot. You have more clotting, worse problems with COVID when you're in that protection mode.

You're making those cytokines that give you that cytokine storm. So there is this connection mode, protection mode, and it is associated with cognitive decline.

Well, and there's so many good side effects that I've seen from your protocol in real time as people get off of statins. You know, for statins are a risk factor for cognitive decline.

When people get off of proton pump inhibitors, proton pump inhibitors are a risk factor for cognitive decline. So, you know, when people can see these objective changes where it's like, okay, I was taken you know, all these prescriptions and now I'm not, and they see, you know, such rapid changes.

It's so exciting. And then when you think about that connection mode, here we are again, Dr. Bredesen, to relationships. I mean, you know, that people, people tend to stay away from people who are experiencing cognitive decline and people stay home who are embarrassed when they can't remember things like they used to or names like they used to.

So it really does impact relationships and relationships are the thing in our lives that fulfill us and that make us happy. No question. And again, as with so many of these things, there's a bidirectional input.

So in fact, having good social interactions has been shown repeatedly to be something that inhibits cognitive decline. You're interacting, you're getting positive feedback, you're enjoying life, you're out and doing things, you're back in that connection mode again.

And so what's happening is, as you said, this impacts your relationships as you start faltering, as you start having problems. You're not enjoying things.

You're not happy. Your relationships aren't as fulfilling. You know, again, these are things that, as a scientist, I didn't think used to think were important in cognitive decline.

I thought it was all about the biochemistry. But it's turning out that these things interrelate very importantly. So no question. And you know, you can imagine yourself if you're out with your spouse or significant other or your friends, whoever you are, if you're in a good mood and you're feeling positive, you're interacting, you just have a richer, happier life.

When you're now having trouble, you're, you're flailing. You're like, did I remember this? Oh my gosh. You're upset

with yourself. It just doesn't go as well.

Yeah. No, it's, it's, it's crazy how it always comes down to two relationships. And in your book, you mentioned the dancing Nana. And she's someone that I follow on Instagram.

It's so hilarious because I, I, I read about her and I would tell you listeners look for the dancing nan and she's a hundred, she had a birthday in March, 102. And I think her name is completely, you know, and she is a tab dancer and she is, you know, you can see it on her face and.

She's just having so much fun. And one thing you bring out so well in your book, Dr. Bredesen, I mean, you bring out a million things great, but that people can learn new things no matter how old they are.

Like never think you're too old. And you know, Professor Mike Merznik, one of my influences, fantastic professor from UCSF, and he is the father of brain training.

And he studied for many, many years what happens to the brain when you're learning, what happens when you experience things. And he's the one who really pointed out years ago that this old idea of you learn things, you can't teach an old dog new tricks, that that is not correct.

Now, that's not to say that you don't learn. Yes, you're learning. voluminous stuff when you're very, very young. That's why it's easier to learn a new language when you're three or four than when you're 93. We get that.

But his point was you definitely still have neuroplasticity throughout your life. And again, this is what The Ageless Brain, the book, is all about. you can optimize that neuroplasticity throughout your life by making sure you're doing the right things and making sure you're insulin sensitive and you don't have ongoing inflammation.

So absolutely, and as you said, it's the tap dancing, it's ping pong, it's ballroom dancing, it's getting out and trying something new, riding your bike, playing some tennis, whatever you like to do is really helpful for your neuroplasticity.

Well, and you know, one of my favorite dead guys is Donald Hebb, the heavy neurons that fire together, wire together. So I think it's really important, Dr.

Bredesen, for people to tell themselves, I can learn something new. I'm, you know, I'm a 67 years old. Oh, well, I love being 60. I love being this age.

I can learn new things and I'm going to learn this and let, you know, and not just not tell themselves the wrong thing. You know, I'm just old. It's just normal that I can't remember, you know, Fill in the blank.

No, I tell my patients, I make them sit in front of the mirror and, and tell themselves the truth, you know, and I think that's, that's key. Yeah. And I'm just turning 73. And so, and I'm still interested, you know, the new things are happening.

We're seeing things we've never seen before. You know, I just was talking to Steven Gundry recently on his podcast and went down and visited him in Southern California.

And Stephen said, he's a little younger than I am, but he said that the reason he keeps doing this, he's got a very busy schedule, seven days a week. He said, but things that he would have considered miracles 25 years ago, things like reversing cardiovascular disease, reversing cognitive loss, reversing autoimmunity.

He said things that he would have considered miracles. He said he's seeing these on a daily basis now. So he's seeing things that are so exciting to see people improve.

And really what we're seeing as a field now is that the complex chronic illnesses that did not yield to 20th century medicine, simple prescription pad medicine, things like Alzheimer's, Lewy body disease, cardiovascular disease,

cancers, autoimmune disease, rheumatoid arthritis, lupus, all these things are yielding to personalized medicine protocols, so-called precision medicine.

And this is very exciting, you know, just to see people getting better that had no hope is such a wonderful thing and very fulfilling. And so I want to see as many people as we can improve their cognitive status and improve their brain spans.

absolutely improve their brain spans. And once in a while, Dr. Bredesen, someone will say, oh, it's so expensive to have those tests. So when I say have you look at the price of memory care per month, you know, I mean, it is a bargain compared.

It's a great point and it's a tough one because I totally get it. Nobody wants to spend hundreds of dollars for testing. But what you have to remember, it's a little bit like your car.

Catch things early and they're going to be much, much less expensive and much more successful. What we see is for people who get on prevention, we've never seen anyone go to becoming demented.

For people who have SCI, virtually 100% of those people can get better. We see people get better all the time. We don't see people who don't, if they do the right things.

For people who have MCI, in our trial, 84% of people got better, but not everybody. Out in the community, we've evaluated the outcomes, and about 50% of the people get better.

Of course, in the trial, people were really right on it, doing everything all the time, so they had better results than standard of care in the community.

In dementia, the goal is really to stabilize. We do see people improve, but we don't see them improve all the way back to normal. So that's the difference.

So again, getting on early. As you indicated, memory care facilities are typically over $100,000 per year. So you can save 90% of that or even more by doing the right things.

Again, get evaluated. You may spend something the first year, that's true, especially if you already have some cognitive change. But by the second and third year, it's much, much less.

And as some people have said, look, you can do this for almost nothing. If you just do the basics, if you do the optimal, optimize your food, your exercise, do those sorts of things.

You can do the vast majority of this. Yes, you might want to have a few supplements like vitamin D. I happen to like resolvins, one of the ones I like.

I happen to like cytokoline or alpha GPC because that improves my cholinergic status, improves my memory. As I mentioned earlier, I take the K2. I also happen to like the magnesium.

That's been very helpful. I was low myself. Potassium is another one that can contribute to problems. So yeah, there are some basics that we can all do, but there's so much available now.

And so you can save the vast majority. Unfortunately, the average American, if they develop Alzheimer's, will spend about $400,000 in total before dying.

So, let's prevent 90-plus percent of that over your whole life. Just get the basic tests, make sure you optimize things, and save your money and save your brain.

Well, and the place to start is to read your book, The Edgeless Brain. I mean, it's fantastic. It's absolutely fantastic. I probably drained a pen writing in it, you know, because writing in margins instead, Dr.

Preston. Well, thank you so much. I know you've got a busy schedule and thank you listeners. Share this with people that you love, that you want to stay in relationship with.

Vitality Made Simple is now in 140 countries and I think we're in over 5,500 cities and that's because you're sharing. Join me on Instagram, join Dr. Bredesen on Instagram.

I'll put some of these links in the show notes. And it is just a joy to be with you, Dr. Bredesen. And it is a joy to have this podcast and have our listeners learn from you.

And I can't thank you enough for your time. You're someone I have respected so highly for over two decades. Thanks so much, Dr. Esmond. Great to talk to you and thank you for the great work you're doing.

My pleasure. Blessings until next time. Thank you for tuning in to Doctor Talks. We hope today's episode has enlightened and inspired you on your path to optimal health.

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