



EPISODE 1022

This Breakthrough in Alzheimer's Research Can Save Millions of Lives

With Dr. David Perlmutter

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SHAWN STEVENSON: This is a special news alert. Most people are still unaware that neurodegenerative diseases, including Alzheimer's, are now in the five leading causes of death here in the United States. Today, you're going to discover a true breakthrough in our ability to end this epidemic, and everyone needs to know about this.

This is one of the most important interviews that I've ever done, and it's definitely one of my favorite interviews of the year. You're going to discover cutting-edge science about the brain's immune system, clinically proven strategies to protect your brain from degeneration, and much more. So without further ado, let's dive in with our special guest and topic of the day.

Dr. David Perlmutter is a board-certified neurologist and six-time New York Times bestselling author, including the author of the number one New York Times bestseller, *Grain Brain: The Surprising Truth About Wheat, Carbs, and Sugar*. His brand new book, *Brain Defenders*, represents a massive paradigm shift in neuroscience, moving away from the failed amyloid-targeting drugs towards the concept of immunometabolism, the groundbreaking science of how our brain's microglial immune cells can be reprogrammed to protect us rather than destroy us.

This shift in the conversation moves us into proactive and preventative strategies with key research-backed strategies to improve brain health beyond what we've understood up until now. Let's dive in this conversation with the incredible Dr. David Perlmutter.

Today we're gonna dive in on a subject matter that first of all we need to get a lot more awareness about the severity of the situation, but also talk about where we need to really put our focus.

And you've done an amazing job putting this new book together for us. Can you start off by talking about the current state of affairs, just so people are aware when it comes to dementia and Alzheimer's?

DR. DAVID PERLMUTTER: Sure and my hope is that we'll broaden our conversation well beyond just that issue, not as if that's not a super important issue.

But ultimately, you and I are gonna talk about all neurodegenerative conditions because they're all united by one fundamental mechanism, and that is a shift in the brain's immune system. But that is a great segue to Alzheimer's because I call it an epidemic. Here we have a disease affecting about seven million Americans, 53 million people worldwide, and it's almost universally fatal.

No one really talks about that, but it's the third leading cause of death in America is Alzheimer's disease. So this, we need to contextualize this as a, an epidemic, call it like it is. Why we don't is beyond me. But the, the challenge for me is really messaging the world or to anyone who will listen, which is why I'm grateful to be here today to the idea that Alzheimer's is not caused by the accumulation of a particular protein called beta amyloid in the brain, full stop.

And yet if you ask somebody what is the cause of Alzheimer's, they're gonna say even doctors, it's we grow too much beta amyloid in the brain, next thing you know things fall apart. It just isn't true. And I cover that in the book- And after I submitted the manuscript for this, as in last month, a what's called a Cochrane analysis was published, which is the gold standard scientific review of a topic.

And the topic they reviewed is how effective are the drugs that target this beta amyloid in the treatment of Alzheimer's? And their conclusion, they looked at 20,342 individuals in 17 studies over 18 months per study. They found that the utility of these drugs, how they worked, was useless basically. The word they used was trivial.

In the face of significant, sometimes life-threatening side effects of these drugs, the drugs get rid of the amyloid in the brain, and yet the patients still decline and ultimately die of Alzheimer's. And yet that's what's FDA approved. That's what's messaged on TV commercials at night and what doctors are being targeted by advertisements to prescribe.

So You know I don't wanna curse the darkness, I wanna light the single candle here, i- in in trying to be in line with Model Health, right? Give people the tools. But I- that's the groundwork upon which we build the idea of empowering people to make changes and redefine their, the destiny of their brains.

That's what our time together is gonna be all about. So that's the biggest myth and that is that we should live our lives however we choose, and then suddenly when we're cognitively a little bit impaired, that we go to the doctor and he or she prescribes this drug. It's really unfair, it's a disservice, and we can do better.

SHAWN STEVENSON: Yes. Yes. Thank you for sharing that. Would a good analogy be with this amyloid plaque, and as you mentioned, thankfully the education is changing, but would this be a good analogy to say that it's kind of like a, a fire taking place and there's firefighters there on the scene, and the firefighters are getting blamed for the fire?

DR. DAVID PERLMUTTER: Because they showed up. That's exactly right. And I think we're gonna use the firefighter analogy quite a bit today because what w- we're really wanting to do across the spectrum of neurodegenerative conditions is not focus on the smoke anymore. We need to focus on the fire. Like in Parkinson's disease, the, when, I have said we have no treatments for Parkinson's disease, my colleagues raise their eyebrow because we have a list of drugs that we give Parkinson's patients to treat the tremor, to treat the rigidity, the slowness of their walking, their bowel issues, their sleep issues their mood issues for sure.

But that's the smoke. We're not treating the underlying issues that are leading to brain degeneration until quite recently, and that's again, that lit you up, didn't it? You went- Yeah ... what's next? We'll talk about it. But so we have to go back and say, what in the heck is making this good brain go bad?

SHAWN STEVENSON: Yes.

DR. DAVID PERLMUTTER: And it is fundamentally a shift in the immune system of the brain from being supportive and nurturing to being destructive, from being brain defender cells to

being brain destroyer cells That's what this is all about. These cells, here's the terminology, called microglia. These microglia cells are either n- nurturing and loving, helping you grow new brain cells.

Who knew? Helping you nurture your synapses, the connection between brain cells, keeping the blood-brain barrier working, letting neurons be fully functional, or depending on what they see in their environment, which we control, you control, they'll shift to becoming what I call in the book the evil twin.

And this is the central thesis now underlying Alzheimer's and Parkinson's and multiple sclerosis and really, again, all of the neurodegenerative conditions. So the idea that we have a unifying concept underlying the entire panorama of what makes a good brain go bad is pretty empowering.

SHAWN STEVENSON: In the book, you talk about this emerging field and awareness of immunometabolism because obviously when we think about the immune system as you detail, it's usually in the context of fighting something.

But what is the immune system doing all the rest of the time when it's not proactively fighting against a pathogen?

DR. DAVID PERLMUTTER: That is such a great question. Shawn, way to go. Two things that you just mentioned that are, it's stellar basically. First, that yeah, the immune system isn't just on guard waiting for an infection till your immune system kicks in.

Oh, I see these viruses, these bacteria. Now I have a job. I'm gonna go do something. So it's really understanding the immune system doing a lot more even in times when there's no threat. The immune system is keeping everything working. It's like after the fire, the firefighters go back to the firehouse, and then what do they do?

They polish up the firetruck. They change the oil. They make sure everything's working, right? So again, that's analogy time number two. We're gonna do it countless times today. But that's

an incredibly important point. And, the other thing is you mentioned a term that I have really grown to love, and it's called immunometabolism.

And so many other examples these days of ideas that we thought were really disparate like the brain and the gut, now everybody's talking about the gut-brain connection. Similarly, immuno- immunology, the immune system, and metabolism, those seem so disparate, but no, they're not, that our metabolic health, which you focus on day in and day out in your outreach, in the books that you've written, is fundamentally charting the course of the immune system.

Who knew? Whether the immune system is, as I described, brain defending or brain destroying is based on the metabolism of those immune cells, which is a mirror of the metabolism of your body Wow. Those are powerful dots. Why? Because now we know we have entered our body's metabolism when we exercise, when we eat the right foods, get enough sleep, socially connect to other people.

Those things powerfully affect our metabolism. Our immune cells in the brain reflect that. They see what's going on with their metabolism, and they determine then whether they're gonna be supportive and building a better brain or they're gonna be, primed to be destructive. So now we're really doing a great entree into the idea that we have the tools, things that you've been talking about for years, but in the context now of building a better brain.

SHAWN STEVENSON: Yeah. And we're going to obviously jump right into the brain and take a look at the immune system of the brain because it's different than what's going on with the rest of the body, obviously with the blood-brain barrier specifically. But just keeping this very, very important insight going, when we're talking about the immune system in relationship to metabolism, you mentioned, so it's affected by our overall metabolism as us as a person and our practices and our lifestyle and our genetics, but also our immune cells themselves have their own metabolism. They're doing metabolic stuff.

DR. DAVID PERLMUTTER: Gosh.

SHAWN STEVENSON: And so this, my question I wanna ask you about-

DR. DAVID PERLMUTTER: And I didn't prompt you. This is amazing.

SHAWN STEVENSON: And so I wanna ask you about specifically, this has got me thinking in this train of thought where we might see an increased incidence of neurodegenerative conditions when our immune system, our overall metabolism of the individual is affecting the immune system, say in a state of overweight or obesity, and we have more inflammation going on, for example, or the immune system is just maybe fighting a bigger fight.

Could that have a relationship?

DR. DAVID PERLMUTTER: You bet is the simple answer, but let me unpack it a little bit. So we've known for years that if you happen to be a type 2 diabetic, your risk of Alzheimer's may go up as much as threefold. If you have midlife obesity, you just mentioned that risk for Alzheimer's is dramatically increased.

If you're a type 2 diabetic, your risk for Parkinson's may be as much as 85% increased. Think about that. The idea that being metabolically dysfunctional has a huge impact on the brain. We've never talked about diabetes being a risk factor for Parkinson's. Most people have never heard of that, and yet that segues to a, a conversation about if we can target blood sugar control, might that be some effective approach to, let's say, Parkinson's?

Who would ever come up with something like that? And when we talk about targeting metabolism these days, where does the conversation go? In our world, it goes to our lifestyle choices, but in the broader picture, it goes to GLP-1 drugs. You talk about, "I wanna fix my metabolism. I'm gonna lose some weight, get my blood sugar down," next thing you're doing yourself an injection how- however often, taking Ozempic or whatever it may be.

That's the go-to. I don't wanna be castigating out of hand as it relates to that because there's some valuable information there. I wanna look at that. I don't wanna. close the toolbox today

and say we're only gonna do the lifestyle choice." We gotta look at everything. As mentioned earlier, these conditions are almost uniformly fatal, so we've gotta open our opportunities here, and this might be an opportunity.

Here is an intervention, a GLP-1 drug, that dramatically targets metabolism, that helps mitochondria work better, that does indeed lower blood sugar, and as, as we are now seeing, incredibly widespread potential benefits, even as it relates to cancer and obsessive compulsive behavior, depression. Lots of things are being revealed, but let's keep in mind the potential risks.

So let me get back to the notion of Parkinson's being related to elevated blood sugar. Again, who knew? That said, that paved the way for the idea that maybe a GLP-1 agonist drug might be helpful in Parkinson's. Can you imagine? So researchers publishing in the Journal of the American... No, publishing in the New England Journal of Medicine, would I say top tier?

Absolutely. As the, the most widely respected medical journal on the planet, perhaps it is. In 2024, conducted a study evaluating 157 individuals with Parkinson's disease, and they did this study b- based on the idea that, yeah, if you're type 2 diabetic, you have a higher risk. And it was an interventional trial. Half the group got a placebo and half the group got this GLP-1 drug that is not commonly used in America, or it is not used now.

But anyway, followed them for a year and lo and behold, the Parkinson's patients that got the placebo, as predicted, declined quite significantly over the course of one year. We see that. But the group getting the GLP-1 agonist drug, their disease dec- decline was completely arrested. That's treating the fire, not just the smoke.

Treating the smoke, giving people drugs for their tremor and their rigidity, that's standard of care. We do it all the time. But finally treating the fire by targeting their metabolism, affecting their immune cells in their brain through what you just described, immunometabolism, the disease was stopped dead in its tracks.

That's pretty profound. For me to see that it's, to me it's why that's fantastic. WTF. Why that's fantastic. Yeah. Pretty unbelievable, right? Say what you will about GLP-1 agonist drugs and we can discuss that on both sides of that equation, but that's great information that at least tells us that when we begin targeting metabolism-

It has a powerful effect on the brain's immune system, and that is way upstream of the accumulation of beta amyloid protein or alpha-synuclein or any of these other misfolded proteins that pharmaceutical approaches tend to really wanna focus on as being the one thing causing this disease. No it's way upstream of that, and so that's really where we're going.

And it's not just, I write this book about, all right, we know that metabolism's important. Here's how we specifically target the, your metabolism to improve your microglial cells' function to make them be nurturing as opposed to destructive. I will assure you that as of this morning, my reading from even this morning, that this is hot in the world of pharmaceuticals and technology.

They are looking at ways of targeting the microglial cells, the brain's immune cells, through technology and through pharmaceutical intervention to bring this about. This is the pivot point as it relates to brain degeneration. And now I'm welcoming the research that's going on

SHAWN STEVENSON: It's exciting.

DR. DAVID PERLMUTTER: Yeah, it really is.

SHAWN STEVENSON: It's very exciting. And, you mentioned the brain's immune system again. So I want to park ourselves upstairs and talk about this a little bit more, and in particular really highlighting brain defenders. But just to unpack for us, again, there's a difference with the immune system and immune system activity with the brain versus the rest of the body.

And, there is a camp of people, there's flat Earthers out there, and there are people who don't even believe that there's a blood-brain barrier. It's just all, it's hogwash

Can you talk about because this is what you do. You're studying the brain.

Is, what is the difference? W- how is the brain's immune system different from the rest of the body? You mentioned the glial cells, the microglial cells specifically.

Does that make up a bigger portion of what's going on in the brain versus the rest of the body?

DR. DAVID PERLMUTTER: First, the idea that the brain even had an immune system is relatively new.

SHAWN STEVENSON: Yeah.

DR. DAVID PERLMUTTER: All the conversation's been about the neuron. We have 178 billion neurons, and let's just talk about them. What can we do to protect them? Whatever. And then, it was discovered in the early part of the 20th century by Dr. Santiago Ramón y Cajal in Spain that there were other cells in the brain.

Who knew? And it turns out that 50% of the brain cells are not neurons. They are these glial or glue cells because Dr. Cajal noted that these cells are smaller, and they're positioned between the neurons, and he thought maybe they're gluing them together, giving the brain some structure. So that's where the term glia comes from, glue.

And there were several varieties of them. There were some called astrocytes, which are called astro 'cause they look like stars, and then these other smaller cells called microglial cells. And as he and further researchers were looking at them, they saw them on slides as being between the neurons. Okay.

But ultimately, more recently- In real time, the cells were noted to be moving. They were moving around the brain and doing things, and it was then realized that these are the immune cells of the brain. Very similar to the immune cells in the body. The body, some of the body's cells actually, immune cells, have also a supportive and a destructive role.

We call that M2 supportive, M1 destructive, like the microglial cells. But even their origin is different. From m- maybe too technical, but embryologically, the microglial cells come from the yolk sac. All the rest of the immune cells in the body come from bone marrow. So from day one, they're different.

They come from the yolk sac, they migrate into the brain, then they populate the brain. So it's a very distinct population. But importantly it's a population of cells over which you have control right now, that every, every squat you do every restorative night's sleep you get every dietary choice that helps keep your blood sugar under control is nurturing the M2 loving brain defender microglia and keeping those evil twins, we still care for them, we love them, but keeping them quiet.

That's what every lifestyle choice you do today does in your brain, plays out. So in a very real sense, that ball's been hit to your side of the court, and you are the architect of your brain's destiny. So this idea that if you live to be age 85, and I'm certain you will, that you will have a 50/50 chance of becoming an Alzheimer's patient, you've just dramatically, by the choices you are making, tipped the odds against that happening to you.

In my generation odds of people age 65 and over of being diagnosed today with Alzheimer's or other form of dementia are one in nine, and that's a scary proposition, and I wanna do everything I can not to be in that camp and spread the word that doesn't have to happen to people.

So but I wanna be sure, and this is I think really important, that The seeds are sown for later brain degeneration in your age group, in people in their 30s and 40s and 50s. That's when the metabolic issues are beginning that are paving the way then for the brain to begin degenerating. And then ultimately when we're my age, then the manifestations of beginning to slip mentally are demonstrated.

But the target population for preventing that from happening is now, in your age group, you young f- young folks. And I wanna make one other point, that is it's not just about helping r-

pr- preserve your brain such that when you get to be my age it's gonna work for you. It's also about how your brain is working today.

These very same issues that lead to brain degeneration are the same issues your age, your population needs to be focused on to have your brain functioning at the highest level today, most efficiently, most most comprehensive type of function, and ultimately more resistant to decline.

SHAWN STEVENSON: Yes. So we want to be proactive today, starting yesterday, at protecting and supporting the health and function of our microglial. Like you bet really focusing on that. And again, as you mentioned to kick off the show, this is not just relegated to dementia. This is also relegated to the vast array of neurodegenerative conditions that have just really skyrocketed in recent decades. And so now we're getting really to the heart/brain of what is our greatest defense against this.

Because as you shared too, and you really detail in the book, our current treatments are simply not effective at helping to really make a substantial difference in reversing the condition. That just doesn't exist at this point. But what does exist is very strong brain defenders that can dramatically reduce your risk of developing these conditions, and slow the progression dramatically if you...

DR. DAVID PERLMUTTER: yeah. Let, for your population really present something I think that'll be far more of a touch point, and that is your risk of full recovery or better recovery after head trauma. Falling off your mountain bike, full contact you don't call it full contact karate anymore mixed martial arts.

In my day it was full contact karate, and head trauma here, which I wish didn't happen, but did. But anything you're, any contact sport, any risk that you have for head trauma-

SHAWN STEVENSON: So you did karate?

DR. DAVID PERLMUTTER: Oh, in those days we didn't call it MMA. MMA was a term that evolved- Oh ... in my later years.

SHAWN STEVENSON: Yeah, you do look like you could chop somebody in the neck. Like you just have,

DR. DAVID PERLMUTTER: It was, we called it either full contact karate or kickboxing. Yeah. To yeah, and I remember one experience where got a little overconfident and took actually an unexpected roundhouse kick to the head, ended up on the mat, and the guy's counting me out, and I said when I finally opened my eyes, I said 'cause I'd already started, begun starting studying medicine, I said, "I've got diplopia."

And the ref I- looks at me, he says- "What?"

SHAWN STEVENSON: He's talking gibberish.

DR. DAVID PERLMUTTER: Nine, 10, and he s- and he said, "What's?" I said sorry, double vision." And 'cause I was, I, I got, I took a big hit. And I know now the, one of the reasons is 'cause I was up too late the night before. I was a little slow on my game.

Anyway, but those things have all happened to all of us. I'm sure you've got lots of stories. And but the point I'm making is that In a given population experiencing head trauma, your ability to recover from that event depends on your microglial cells.

If you're metabolically compromised, your ability, because of what you described earlier, immunometabolism, your ability to recover fully will be less likely.

If you're already with, insulin resistance overweight, having some metabolic issues, because your microglial cells can't go back to being nurturing and allow you to increase neuroplasticity, increase the gaining of function of your neurons. Type II diabetics have head injuries, their recoveries w- is less.

They don't- Yeah ... recover as well. So it's about doing these things on the front end before, we could say, okay, before you're 70 years of age and now you're becoming cognitively impaired. No. Before you fall off your bike, and that, before you, your child is heading a ball in soccer, we wanna make sure that they've got the right things on board.

Fish oil, for example, to keep those microglial cells where they need to be.

SHAWN STEVENSON: When it comes to energy and performance, it all starts with the powerhouse, power plants of our cells called the mitochondria. Our mitochondria are so abundant, they actually make up about 10% of our overall weight as adult human beings.

We got a lot of mitochondria to run a lot of processes. Now, we wanna make sure that we're not gumming up that process of energy creation, and not only that, how can we add to it to create more mitochondria and more energy efficiency? One of the most important components nutritionally has to do with these incredible minerals that carry an electric charge called electrolytes. In particular, something like magnesium, for example, is required to make new mitochondria.

It's a process called mitochondrial biogenesis. The creation of new mitochondria depends on magnesium to be present. Pretty amazing. Plus, we've got this remarkable sodium potassium pump that has a lot to do with the energy exchange going on throughout all of our cells. It isn't just about the mitochondria, of course.

There's a huge data network that runs this amazing human entity, but again, it all works together, and those three electrolytes in particular are an important place for us to focus. And so we wanna make sure that we're getting plenty of electrolytes from our diet. But today more than ever, whether it's high-performance athletes, top CEOs, or just everyday folks looking to fuel their days and fuel their performance, supplemental electrolytes are one of the most popular things in the world.

But for decades, that medium has also been a source that has been rampant with artificial colors, artificial flavors, and ridiculously high amounts of refined sugars. And to that, we've

said no more. Enter the age of LMNT. It has no artificial colors, no added sugars, and no dodgy ingredients, and it has science-backed ratios of those three key electrolytes based on hundreds of thousands of data points with real people.

When people utilize LMNT, they truly notice the difference, whether it's in their stamina, their cognitive performance, helping to manage hunger and cravings. There really isn't a metabolic process in the body that an electrolyte supplement like this cannot support. And right now, when you go to drinkLMNT.com/model, with every electrolyte purchase, you're going to get a free sample pack with two servings each of their four most popular flavors.

Incredible. Go to drinkLMNT.com/model right now to take advantage of this incredible offer, this very special gift. LMNT is a big part of my life, my team's life, my family, friends. It's really an incredible supplement. Super easy to travel with. I always have their little packets on the go with me when I'm traveling.

Also, when I'm working out, it was just in my water bottle today during my workout. Truly love LMNT. Head over, check them out. It's drinkLMNT.com/model to take full advantage of this very special offer and this special gift.

And now back to the show. Amazing. This is a great opportunity to talk about some of these things that we can be doing proactively, and I think people are gonna be surprised in some of these, but some of them is just a affirmation.

But I wanna start off with one of the most powerful and, we literally are creating chemistry in our bodies that protect our brain when we do this particular thing. Let's talk about how powerful it is and why we need to exercise in order to defend our brain.

DR. DAVID PERLMUTTER: What a question. Exercise to defend the brain.

We've known a long time that people who are active have a lower risk for brain degeneration. The Blue Zones told us that people who have a lot of verticality in their lives, live in a place where they gotta go up and down steps or s- inclined roads or whatever.

And, more recent studies that clearly show that there's a correlation between your level of activity within reason, we could talk about that later and b- building a brain that's more resistant to decline. We got that. Okay, so I should exercise more, but, you would wanna know, and I wanted to know why.

What the heck's going on? How's it working? So it turns out that our muscles, believe it or not, are actually endocrine glands. So we think about our endocrine glands, like our thyroid makes thyroid hormone that's goes elsewhere in the body and does good things, and the pituitary gland, the adrenal glands are th- We define an endocrine gland as one organ that influences something else at a distance.

Our muscles do that. Who knew? So our muscles are, when they're activated, are secreting chemicals that go throughout the body and do good things. Some of these chemicals that's, they're called myo, muscle, kines, meaning they're moving around doing things. Kine means movement, kinetics. They're called myokines, and they improve our metabolism, they help lower our blood sugar, they help improve insulin sensitivity.

All really good for the brain, really good for metabolism, and then through immunometabolism, good for the microglial cells. They create chemicals that make their way to the brain to turn off, rather to turn on the production of something called BDNF. You've heard of this, brain-derived neurotrophic factor, stimulating the formation of new brain connections to each other, new brain cells, activating these microglia to be nurturing, not destructive.

So we really need to look at physical activity through that lens. That number one, you wanna do it, and number two, I like these chemicals. I want more of them. How do you get more of them? By building bigger muscles. And, I think one of the biggest risk that happens as we age is loss of the ability to have continued good muscle tone, lots of muscle mass, muscle bulk.

We call that sarcopenia. As we lose muscle mass as we age, we gotta avoid that. We gotta do everything we can. And to be fair, I'll tell you from personal experience it's more challenging

as we get older to maintain muscle mass. It is the exercise, but it's also making sure you're getting adequate amounts of protein.

Maybe use a topical testosterone, a gel if need be with monitoring of your testosterone level. All the things that we know that can help maintain or even recoup muscle mass as we age. Again, I know it becomes more difficult. But that said, we wanna build as much of these chemicals as we can.

We wanna have that pharmacy in our bodies really be spitting out a lot of these good chemicals. So we wanna build muscle mass. And I think one concept that people are perhaps less aware of is the largest muscles in your body are in your legs. If you're training to look good, you're working on your triceps and your biceps and your pecs, of course.

But the best bang for the buck as it relates to brain health are gonna be your leg muscles. So we talked about it before we went live today, and that is that you were talking about certain exercises for leg muscles. Couldn't be more important. Whether it's a, a leg press machine or doing squats, whatever it may be, that's really critical because the bigger those muscles, the more of these myokines, this irisin and interleukin-6 and, others that they're gonna, they're gonna put out that are good for your metabolism and ultimately good for your microglial cells, and now explaining why it is that exercise is associated with preserving your brain

SHAWN STEVENSON: This is awesome. So do you have a pull-up bar on your boat?

DR. DAVID PERLMUTTER: No, I have bands that I use on the boat, but I do pull-ups-

SHAWN STEVENSON: I know you're doing something.

DR. DAVID PERLMUTTER: I do pull-ups, but I don't have a pull-up bar. There's- Yeah ... actually, there's a piece that comes across the mast, and that's what I use.

SHAWN STEVENSON: Oh. Yeah. You see, the creativity.

DR. DAVID PERLMUTTER: Yeah, but I found that doing curls with the, the band- ... putting the band under your feet and doing curls- ... then of course wrapping it twice around your feet 'cause you wanna do them harder, was bad for my back.

I got into big trouble doing that. So anytime I'm doing curls that putting pressure down-compressing my spine I avoid that. I'd rather do pull-downs on a machine or on a rowing machine for biceps. But personally, in personalized medicine, I can't pull, I can't do with an EZ curl bar because that compresses my spine, and I got into big trouble. Real big trouble.

SHAWN STEVENSON: Thank you for sharing that, by the way.

Yeah. Because this is another part, it's not just personalized medicine, it's personalized exercise, too, and everybody's body is different. Yeah. And it's just finding those things and paying attention also when something doesn't suit your body. And by the way for years obviously when I met my wife, actually, I worked in the gym at our, at the university that we met at, but I worked with a lot of athletes and everyday folks as well, and it was crazy how many people felt like they couldn't squat.

Yeah. And it's just it's not that you can't squat. You can't squat in the way that this other person is trying to make you squat, or you think you're supposed to squat. The way that your body's put together is different. We can find some kind of like regression of the exercise.

Maybe it's like a box squat or whatever the case might be.

DR. DAVID PERLMUTTER: There's a machine for that. You can dial in the counterweight.

SHAWN STEVENSON: There's a machine for that as well.

DR. DAVID PERLMUTTER: You can actually di- dial in the counterweight or spread your legs a little bit further to start off with. Yep. And then squats become harder the more, the closer your feet are together.

So if you can get to shoulder width on your squats, have at it, and do however many you think you wanna do in a given day.

But I think that's really important. Let me get back, this is kinda off topic, but here's a point. If people are getting back pain after their training and wanna know why, it may be you're doing too many extensions, whatever it may be.

But look at stand-up curls with the EZ curl bar. I'm not trying to knock the EZ curl bar. But I'm saying that for me, maybe there's a lesson here. I'll actually mention two things. Think about that if you're getting low back pain and you can't figure out where it may be, the last thing you might think of is curls.

How is that hurting my back? It's the counterweight is your lower spine when you're doing Easy Curl. The other thing is now that I have a moment to mention one other thing that I think is important, 'cause I sometimes have to reign myself in the gym because I see people doing this and I know they're gonna hurt themselves.

If you're using an elliptical machine, keep your feet flat. Don't be thinking you're, you wanna roll that heel and come up. You'll get stress fractures of the front part of your feet that are gonna take you weeks to recover from. I just wanted to say that. I've never said that on a podcast before, but I wanted to say it because somebody may hear that and understand why their feet are hurting so much.

SHAWN STEVENSON: PSA alert. There you go. Thank you. Thank you for sharing that.

DR. DAVID PERLMUTTER: Yeah, and we should be all checking our PSAs too. I know, public service.

SHAWN STEVENSON: So I wanna add also, because one of my questions was gonna be, like, what are the most science-backed forms of exercise for us to focus on? Obviously, just emphasize strength training being so valuable.

One thing I wanna add to the mix that's got some pretty interesting data around it is balance-type exercises.

DR. DAVID PERLMUTTER: Took the words out of my mouth. Yeah. Because it's always, oh, is it aerobics or is it strength training? And I would say the important number three is flexibility and balance training. And the reason being that if for no other reason than if you're not flexible and working on balance, you run the risk of falling and hurting yourself, at which point your exercise program is over for whatever period of time it takes you to recover.

Everybody's saying is it aerobics? Is it strength training?" What the data shows is it's both. Both target metabolism, BDNF it, both target that, but we really wanna emphasize both because there are metabolic upsides to both of those. So it's a mixture. And again- And on the strength training though, y- it may not help your looks that much, is really work on your legs.

SHAWN STEVENSON: Yeah. Oh, yeah, it'll definitely help your looks if you're looking in the right place. Oh, yeah, if it was a, on whatever you wanna- You know what I mean?

DR. DAVID PERLMUTTER: Yeah.

SHAWN STEVENSON: It's summertime, short shorts, yeah. And I'll be out here looking like like a rooster, I wanted to circle back a little bit, and you mentioned fish oil in the context of defending our brains. There's recently become some conflict about fish oil.

DR. DAVID PERLMUTTER: Yeah, and I know what you're referring to. So, the study came out that concluded erroneously that, in my opinion that consumption of fish oil might be associated with increased risk of dementia. And this was a study basically that looked at individuals who took fish oil versus those who did not, and had no discussion nor was it part of the study, as to the quality of that fish oil.

And we know there are plenty of research demonstrating that off-the-shelf bargain fish oil can absolutely be threatening to your brain, threatening to your physiology, threatening to increase inflammation as opposed to damping down inflammation. So I think quality is certainly something to be thinking about.

The next interesting thing that should be considered is that- Who takes fish oil and why? People who've been reading the literature and suddenly are becoming a little bit not where they wanna be cognitively. I better take some fish oil now because I'm starting to have some issues. So that skews the population towards the people who are taking fish oil already having issues.

So it's not just a general population, nor is this a double-blinded placebo control where we'll give half the group this and half the group that. The research on DHA, one of the components of fish oil- Yeah ... I think one of the most, active components that I'm really fond of, goes back an awful long way, back to the work of Dr. Martha Clare Morris at Washington University demonstrating that the brains of people with Alzheimer's have lower levels of this important omega-3, and that there's evidence of people having higher levels of dietary DHA from ... It doesn't have to be from fish oil, but that's generally where people are getting it, or eating fish that people consuming them have a lower risk.

So I did see the study you're referring to, and I think it's unfortunate because to take people away from this as being hugely valuable is a disservice. And I love science, but let's look at the study and its quality.

SHAWN STEVENSON: Yeah. And there's, decades- Yeah ... of studies on the effectiveness of fish oil DHA in particular, and all of these cognitive benefits, improving working memory and reaction time. Just the list goes on and on.

DR. DAVID PERLMUTTER: Executive function mood as well. Plenty of interventional research demonstrating that. And then again, the epidemiology issues that I mentioned earlier as well. Very valuable. And to throw this baby out with the bathwater based on one poorly constructed study, I think is gonna do a big disservice.

If it gets people, if people get the idea of what I just described and gets them off of poor quality fish oils, then maybe that's a good thing. Who knows?

SHAWN STEVENSON: That part. Yeah. So quality matters- Yeah ... in this context especially. And also, let's point our attention at food sources overall. One of the pictures that you showed me was the salmon that you caught, and this is one of the most notable

DR. DAVID PERLMUTTER: That was a big boy.

That was a big- end of season big boy. That one just was like the icing on the cake.

SHAWN STEVENSON: But that's one of the most notable sources of omega-3s, but in particular, there's an even higher concentration with the salmon eggs or salmon roe, and it is possibly the most concentrated source of things like phospholipids as well.

DR. DAVID PERLMUTTER: That's right. That's exactly right. And as I noticed throughout the summer, people tend to filet their salmons and throw the roe away. And if I happen to be at, by the cleaning table, I say, "Oh, we'll take that. You're more than welcome to it." I think the only thing people keep it for is baiting their crab traps.

Maybe that's a little bit too much information, but my wife has discovered a way of working with the salmon roe, and it's delicious. It's like having fresh caviar, all summer long. It's great.

SHAWN STEVENSON: Yeah. So are there any other foods for us to keep in mind in this context? Again, we're looking at defending our brains and stacking conditions, and food matters a lot.

DR. DAVID PERLMUTTER: Yeah, who knew? Food matters. And we'll get to supplements, I guess, at some point, but food is job one. Supplements are by definition the supplemental things to consider if, either your blood testing and/or your diet aren't supplying what your body needs. But these fatty fish from northern latitudes that have a lot of fat and generally high in omega-3s, a great source.

But, who can get fresh wild salmon or even frozen wild salmon year-round? It's difficult. I get that. So very high quality fish oil supplement, or if you choose not to consume anything from

animals, there are DHA supplements available that are made from marine algae. Great sources of DHA.

So DHA is the ticket here. DHA changes the expression of our genome. Gosh, a food. All foods do. Foods are information. But instructs our genome to produce more of this BDNF, the growth factor for the brain. DHA is probably the highest representative fat in the brain as it relates to the building the membrane of the neurons, and acts as an anti-inflammatory throughout the body.

So home run. It's also interestingly the precursor from which our bodies make these specialized pro-resolving mediators. It's a mouthful. But these are the chemicals that turn down inflammation. And inflammation anywhere in your body targets your microglial cells and shifts them away from being brain defenders to being brain destroyers, what I call the evil twin.

Same cell- ... but becomes the evil twin. So the idea that inflammation coming from anywhere in the body makes its way to the brain and can lead to activating our microglial cells I think is really important because, what's one of the biggest topics these days in terms of where the inflammation's coming from?

From the gut. From leakiness of the gut. Because of changes in the gut bacteria increasing the leakiness of the gut, leading to more inflammation in the body, making its way to the brain, changing our microglial cells, and setting the stage for brain decline. So I just related the micro- the mito- microbiome, the bacteria, and even upstream of that becomes the food that we eat So the food that we eat affects the microbiome in your gut, and it has a role to play in gut leakiness or not, inflammation, microglial cells, your brain's destiny.

So it seems like a convoluted way of relating food to the brain, but wow when those dots get connected, you can take a deep breath and go to sleep at night 'cause we just figured that one out.

SHAWN STEVENSON: Yeah. What are those foods that can tear up our gut health but also can really break down our brain?

DR. DAVID PERLMUTTER: I don't think I've ever said this before in a podcast, but I'm thinking about it 'cause we did have a conversation earlier.

And if it's something that our ancestors wouldn't have eaten 200 years ago, then that's probably the food we're talking about. I've never contextualized it like that, but I think the big issue these days call it like it is the ultra-processed foods. That's relatively new terminology.

When I wrote Grain Brain, that ha- we didn't have that term ultra-processed foods but it was what I was talking about, these highly processed mostly carbs that that's what that book was all about. Which, people poo-pooed, at least in the medical community, saying, "No, we need to eat all of these carbs that we want."

And, ... I said that's not what the emerging science is telling us right now. Let's pay attention." Now, of course, we see the data that relates consumption of these ultra-processed foods with risk of deg- brain degeneration, of Alzheimer's disease. There's actually, believe it or not, a journal of prevention of Alzheimer's disease now.

What a world. And last year in that very journal was a study that looked at, it followed 1,342 individuals. I'm correcting myself, 1,375 individual individuals. Followed them for an average of 12.7 years and evaluated their consumption of ultra-processed foods. They did a food frequency, a frequency questionnaire.

So over this period of time, this is from the Framingham Heart Study. They wrote down what they ate, and a- if they ate as an average one serving of ultra-processed foods per day, one handful of chips, Alzheimer's risk was increased 13%. If they ate 10 or more servings, n- and that's ... There's a lot of people that do that.

It's very common. I've done it. I know. We all have. Their risk would go up was about 2.7 fold,

270% for a disease for which we have no meaningful treatment. That's, as I mentioned, the third leading cause of death in America. And, in the context of the fact that 60% of calories consumed in American adults right now are coming from these ultra-processed foods, and then one wonders Gee, why is the incidence of Alzheimer's going up so dramatically?

60% of our calories coming from ultra-processed foods that are associated with increased risk. So it really gets back to what I said a moment ago, that if it wasn't a food that we consumed a couple of hundred years ago, which these are, these ultra-processed foods, that might explain what the heck's going on right now.

People are scratching their heads going, "Why is this happening?" It's not like we suddenly changed genetically. Genetics has very little to do with it. It's lifestyle. That's empowering because we can change our lifestyle choices, and now we know how it works. It works through redirecting back to being helpful to our brain's immune cells.

SHAWN STEVENSON: This episode is brought to you by the incredible team at Organifi and their phenomenal superfood blends. Not only does their best-selling Green Juice blend have the most powerful green superfoods, it also has a therapeutic amount of ashwagandha. A double-blind randomized placebo-controlled trial published in the Journal of Psychological Medicine had test subjects with a history of chronic stress to consume ashwagandha or a placebo.

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And now, back to the show. Amazing. So bottom line, Funyuns are not good for your brain. Fruity Pebbles, not good for your brain. Mountain Dew, it's not good for your brain.

DR. DAVID PERLMUTTER: In my day it was Bugles.

SHAWN STEVENSON: Bugles.

DR. DAVID PERLMUTTER: Do they still have Bugles? Those corn, little corn things?

SHAWN STEVENSON: They died. I don't know. I'm not out, I'm not looking for them. You can put them on your fingertips, look like you're, you know ... a wicked witch or something.

DR. DAVID PERLMUTTER: That's right, though. Bugles and onion dip.

SHAWN STEVENSON: Creep- very creepy.

DR. DAVID PERLMUTTER: But yeah. Yeah and Heath bars.

SHAWN STEVENSON: The Heath bars. Didn't they have like toffee in it?

DR. DAVID PERLMUTTER: Oh, yeah.

SHAWN STEVENSON: Yeah, I know about that.

DR. DAVID PERLMUTTER: Oh, yeah.

SHAWN STEVENSON: Yeah. What about the Big League Chew? I remember Big League Chew. Did you have that when you were a kid? It was like, this is so messed up by the way, we had candy cigarettes. Yeah. But also Big League Chew-

DR. DAVID PERLMUTTER: They don't still have those. They can't still have candy cigarettes

SHAWN STEVENSON: no, they don't. But I'm sure you could find them as, gosh. But Big League Chew was basically chewing tobacco, but gum. Yeah. So you get in there, it's crazy.

DR. DAVID PERLMUTTER: Yeah. The other one for me back in the day was Bonanamo Turkish Taffy. And anyway, there's a hardware store of all things where I live, and they have all of the old time candies.

There's some company that's collecting them or re-manufacturing with the, all the old names, the Necco things that are these little little tablets, and then Ju- Jujubes. They, don't ... do they still have that? Anyway, Yeah. Sno Caps, all of the old-

SHAWN STEVENSON: The movie candies ... anyway.

DR. DAVID PERLMUTTER: And every, when I'm, 'cause I spend a lot of time in the hardware store.

I go to the hardware store even if I don't need anything just to walk around, look at the tools. But anyway and at checkout I look at those things and I remember, oh man.

SHAWN STEVENSON: Yeah. I could see you walking around a har- hardware store, formerly full contact karate.

You're not just a man, you're a dude.

DR. DAVID PERLMUTTER: Oh, a

SHAWN STEVENSON: And I respect that.

DR. DAVID PERLMUTTER: At age 71.

SHAWN STEVENSON: Yeah. I love it.

DR. DAVID PERLMUTTER: A former dude.

SHAWN STEVENSON: I love it. So before we pivot out of the domain of nutrition, are there any other supplements that we should know about in this context?

DR. DAVID PERLMUTTER: Supplements there, there are a handful I think that are going to be on the almost required list, if not required list.

And let's talk first about vitamin D. It's one of my favorites. It's not expensive. It's fundamental. We're all told to stay out of the sun, get a little sun each day. That's important. But, I think we're seeing vitamin D deficiency be very common, like magnesium deficiency. So we've gotta fix that.

Vitamin D receptors live on the microglial cells. When they are stimulated, they help reduce inflammation in the brain. When they're not stimulated, inflammation can increase directly because of how vitamin D affects the gene transcription in the microglial cells. Who knew? So what's the hack? The hack is to take some vitamin D, but first test your body.

Get a vitamin D level, and don't be satisfied by being in the normal range. That's ridiculous. You wanna be- people following you, they wanna be optimized, right? The optimal range for me what my outreach is saying is 60 to 80. That's what we want. I don't see how we can avoid the emerging literature on, on, on various nutritional supplements like creatine monohydrate.

Every- everybody, in my opinion, needs to be at least thinking about creatine monohydrate. You wanna power your mitochondria. When the mitochondria are less functional, the microglial cells shift to becoming the evil twin. Immunometabolism, it's very clear. A recent study demonstrated a dramatic effect on patients who've already been diagnosed with

Alzheimer's by simply taking, in this case, 10 grams, that's a bit, li- little bit higher than I would take or you would take, I guess, twice a day Far better than any drug.

Creatine at the health food store. It's cheap, it's tasteless. If you have renal issues, you wanna check with your healthcare provider. Probably I'll check with your healthcare provider about anything we're talking about, that's for sure. There's the disclaimer. Got that one in. But creatine monohydrate, coenzyme Q10, B vitamins, B complex, methylated if your homocysteine is elevated.

These are the fundamentals. A good probiotic I think is really important. Make sure you have a lot of dietary fiber, and if you don't, then you supplement with a good dietary fiber. And there's some really cool things out there right now. People kick around the term superfood, and I use that term very reservedly 'cause I think it's well overused, but there's something called Himalayan tartary buckwheat.

Ever heard of that one? You will. This is a food that has the highest level of polyphenols I think of any food that ever been studied, so people will learn about Himalayan tartary buckwheat. And beyond that, look at the quality of the water that you are drinking. Look at the purity and the quality of the air you breathe.

Who knew? We talk about in the book the effects of these PM2.5 particles in the air that we are breathing. Why wildfire smoke is a clear and present danger. Why living close to a highway, look at the research from Canada showing that's a dramatic risk factor as relates to PM2.5 particles that you're breathing to developing Alzheimer's disease.

Epidemiology, very good data. We have in our bedroom a very high quality air purifier that reads the quality of the air that we are breathing, monitoring it, and adjusting itself based on any changes that might happen. If there's a wildfire in the Everglades or they're burning the sugarcane in Central Florida and we get some of that, this thing turns itself up at a higher level than, with a HEPA 14 filter, so we're confident.

We're breathing good air.

SHAWN STEVENSON: Yeah. Wow. Thank you for sharing that. We're looking at all of these obviously the environmental stressors, but we often relate stress to something that's being kinda internally generated, but as a result of external circumstances. And I'm saying all that to say that a missing part of this conversation is the role of stress, and this is something you address in the book as well.

When talking about neurodegeneration in the context of dementia, how can stress be a contributing factor?

DR. DAVID PERLMUTTER: It's a great question because let me first just double-click on this idea that i- in some context, stress is actually a very good thing. A low level of periodic stress in one form or another does you good.

It's why we weight train. That's stressing our muscles. What's the payoff? You're destroying muscle tissue. Oh, that's gotta be bad. No, actually, the muscle tissue responds by bringing itself back to its former level and then a little bit more. That's the hormetic effect of a stress that we choose to engage in.

We stress our bodies by exposing it to variations in temperature, by stressing our bodies by having at times too little oxygen or too much oxygen. We talked about hyperbarics a little while ago outside. But the idea of constantly bar- bombarding our bodies by basically the world in which we now live 24/7 with this low-grade stress accumulating over time works its detrimental effects through multiple channels.

We know that stress hormone, the most important being cortisol makes its way directly to the brain and is threatening to our microglial cells. Microglial cells respond from being stimulated by cortisol or other steroids that you may have been prescribed for your asthma or your aching joint by polarizing to becoming the evil twin.

So that's a call, and we discussed the, not just the, the steroids that you might have been prescribed for your asthma or whatever it may be, but the steroids that your body is making, i.e. chronic stress. The other real important issue, and there are multiple, that this cortisol

does is it changes your microbiome, and it targets your microbiome in such a way that it leads to increased leakiness of your gut such that inflammation is increasing.

Think about that. A- as do the prescribed corticosteroids that you might be taking to reduce inflammation. So what I'm saying is- that these types of steroids in the long run increase inflammation, though you think you were prescribed that to reduce the inflammation in my joint or my lungs, as it does with cortisol from chronic levels of stress.

So it's a clear and present danger, and the level of stress that we're experiencing in today's world is breathtaking. It might be, beyond the chemicals and the atmospheric stuff, the PM2.5s, I think this might be the biggest issue that's so threatening. And how do we offload that, and how do we counteract it?

That's what we talk about. We offload it by recognizing that continuing to doom scroll is doing some really bad stuff for your immune system, for your metabolism, and therefore for your brain. Turn off the news. Get off your smartphone. I interviewed somebody on my podcast recently.

She wrote a book that I'm not, I- correct me, you may know the title, about you're poo- we're all pooping wrong. It's something like that. And I, at the end, how when you're doing a podcast, you wanna go get those, a little quick 60-second vignettes. And I said, "What's the one thing," my team said, "Ask the one thing we can do to poop better?"

And she said, "Don't bring your phone into the bathroom."

Think about that. Ah. Don't be sitting on the pooper looking at your social media because you should be pooping. That's the time to poop, where your body needs to connect with the fact that you need to unwind parasympathetic activation and rest, relax, and include bowel movement in that parasympathetic moment.

Not being sympathetic. Nervous system activated, fight or flight. You wanna let it happen, right? And, then she talked about the literature showing that people who spend time on the

toilet on their phones have much higher risk of developing hemorrhoids because they're not relaxing, they're straining more.

So I thought that was very insightful.

SHAWN STEVENSON: Jeez Louise. Yeah. I have so many things running through my head right now. I remember when I was a kid and when I'd go to- ... friend's house or

DR. DAVID PERLMUTTER: Who knew where this interview was gonna go, right?

SHAWN STEVENSON: ... My, my mom's, my mom's friends, and they would sometimes have a, a little tray or carrier of books or magazines- You bet or whatever, and I always wonder, like, why is that in here, 'cause I, and then when I got a little bit older, I'm like, "Why are they spending so much time in the sitting here with a book or a magazine?" Shouldn't you just handle your business and then get back to living life?

DR. DAVID PERLMUTTER: Oh, God. I- But yeah ... I remember we had a book by the toilet when I was a kid called Jokes for John. And they were these off-color jokes that I probably- Yeah ... shouldn't have been looking at when I was- ... eight years old. But anyway, yeah, you're right. There's this thing of sitting on the john reading a newspaper.

I think- Yeah ... have a little bit of a gut-brain connection at that point and let it happen.

SHAWN STEVENSON: Wow. Wow. And by the way, we've got the title of the book. It's called You've Been Pooping All Wrong, and there are so many ways that we could talk about that conversation, including the position, right?

DR. DAVID PERLMUTTER: Yeah, and she's a lovely gastroenterologist. Yeah. Look at that, look at the podcast on the Empowering Neurologist. Shout out to her.

SHAWN STEVENSON: Yes. Just to circle back a little bit, you mentioned the hyperbaric oxygen, and I was pleasantly surprised to see the stories that you shared and the reason behind utilizing this in your practice. And if you could, can you talk about, first of all, what is

hyperbaric oxygen therapy, and why would you be using this in the context of treating the brain?

DR. DAVID PERLMUTTER: Great question. And it was originally developed for basically treating diving injuries. People for as during construction that people would be working underwater and would get the bends and had to be re-pressurized with oxygen, with air and, but a higher level of oxygen to help them recover.

And then it was realized that other wounds were healing, and researchers began to explore that. Why would that be? Oxygen in the right dosage, very important, it can be very healing. It takes us to the notion of, again, immunometabolism, that metabolism being the mitochondria. The mitochondria take glucose, generally the fuel and in the presence of oxygen through a process called oxidative phosphorylation create ATP molecules.

So we begin to wonder, then oxygen seems to be a player here. We gotta get the glucose into the cell. We need to have adequate amounts of glucose. Oxygen is a player. So about 28 years ago, I built a hyperbaric center in my clinic and began treating stroke patients with head injuries and seeing really nice results based upon research done mostly in Israel by Dr. Shai Efrati, who had already started publishing this research. And more and more research came out with time indicating that for wound healing, now in fact wound healing is a Medicare-approved usage of hyperbarics, which is pretty restrictive. Carbon monoxide poisoning, radiation necrosis or damage to the body and the bones from having radiation therapy or exposure to radiation from another reason, a gas gangrene and certainly decompression illness in divers.

The idea that this is a real salubrious intervention to the human body allowing a healing environment has stood the test of time, and there's plenty of research demonstrating that to be the fact. Why not the brain? Why not the brain? So that's the research that's been ongoing at research facilities around, around the world.

I just visited a big facility in Dubai with really wonderful results. Again, this is Dr. Shai Efrati, has continued to publish his research and now has opened a door for patients with long

COVID. That's obviously a relatively new phenomenon but what is long COVID? Why does it manifest?

Why are... one of the most important issues that people are having are the cognitive issues in addition to the generalized fatigue and muscle aches because their mitochondria are not working. He and his team have published their research showing really pretty dramatic improvements, and I have a case report in the book about that, in using this technology.

It's available around the country of hyperbaric oxygen, going into a chamber, being pressurized, and breathing a higher percentage of oxygen in comparison to what we normally breathe, 21% of the air we breathe being oxygen. This ratchets up the amount of oxygen that we are breathing. It's a, I would put it still in the realm of biohacking as it relates to general health and longevity practices.

But certainly Very front and center as it relates to treating an existing problem

SHAWN STEVENSON: Amazing. Amazing. The great news is that we have so much more access to things that can help to defend our brains but it's still, and this is something we agree on, let's make sure we're covering the basics. And if you could, because I wanna close out the loop on stress because, you mentioned, for example getting off the doom scrolling, getting off of our smartphones more frequently.

What do we replace with that time? What should we be doing to help to modulate lower stress to get more into that parasympathetic?

DR. DAVID PERLMUTTER: That's a major goal. And, interestingly, I think people feel like they've adapted to our modern world and are living their lives not realizing that they are stressed.

And how would you measure it? It gets to the idea that we can hack in such a way as to understand where we are in that continuum between fight or flight sympathetic activity and rest and digest, and now let's add bowel movement activity to the parasympathetic activation.

How would you know? Well- First you look at the ability we have with biometrics, with looking at your Oura Ring or your Apple Watch or your WHOOP, and specifically look at a metric, for example, like HRV, heart rate variability. And if that's not where it needs to be, age-adjusted, it does decline as we age, then you've got an indication that you've-- there's work that needs to be done here.

The other manifestations are elevation of your blood pressure, elevation of your pulse, of course unexplained weight gain and just, people feeling overall the fact that they are jittery, unable to concentrate. These are indications that stress may be playing a role and likely playing a role.

So I think the simplest thing people might consider doing is getting a wearable and one that allows them to understand their HRV, heart rate variability, and look at what would be appropriate for your age. It's a really important concept. And then, we talk about how to manage this, what you can be doing, why exercise is important, why breathing exercise is important, why you need to get enough sleep, why you need to put your phone away, why getting out in nature is so important for you.

And beyond that there are technologies available now that you could even consider using, like vagal nerve stimulators, or there's a device called Apollo Neuro that was developed by Dr. Dave Rabin which is a vibrating device that you wear either on your wrist or where he wears it on his chest.

And he's got wonderful data showing imp- in fact, when I started using Apollo Neuro then I did his podcast or he ha- I had him on my podcast, and I said, "My HRV went up 20 points. I-- and I haven't changed anything else. There's another variable. I just started using your device.

Worked for me." Is that an endorsement? Yes, it is for me. Will other people get that result? I don't know. But I love the data that these people are putting out, and the vagus nerve stimulators as well. So you know, there's technology that you can use in addition to your meditation program and your breathing exercises and getting back into nature.

SHAWN STEVENSON: Listen, the most important takeaway today for me personally is We have agency. So much today, like the, the messaging is that we are at the mercy- ... of these conditions. We are victims. And of course, like there isn't a plan for everything that takes place in one's life. Stuff's gonna happen.

DR. DAVID PERLMUTTER: That's for sure.

SHAWN STEVENSON: And, but with that said, I'm so passionate about stacking conditions, right? Giving ourselves the best opportunity to live the life that we wanna live, and to be as healthy as we possibly can be. And for me also let's pass this down to future generations as well.

And so our decisions right now matter so much, and having access to people like you, you know obviously, you've changed the world. You've literally changed the world going all the way back to Grain Brain and just changing the conversation around health and nutrition and brain health.

And now today, with so much more experience and just being able to really bullet point and consolidate these ideas for people is really special. And this is what we get. We get decades of knowledge and experience from somebody like yourself consolidated into a book form that can change somebody's life.

DR. DAVID PERLMUTTER: Wow.

SHAWN STEVENSON: That can change th- their their family's life, their family tree for generations to come. And so as of now, you can pick up Brain Defenders, pre-order it, and get access to some incredible bonuses as well. It's hundreds of dollars worth of bonuses. And where can people pre-order the book?

DR. DAVID PERLMUTTER: I'm gonna respectfully get there in just a second, but I wanna say right back at you. Because what do you do? You're here giving people information that's gonna be helpful for the rest of their lives, and that's game-changing as well. I wanna honor you with with that compliment because it's so important.

You're selflessly doing this, getting out information from all of your guests. They bring great information, their experiences here. And it's, the word doctor doesn't mean healer, it means teacher, and you're absolutely a doctor in that regard. So I honor you for that.

Thank you.

SHAWN STEVENSON: Thank you. I receive that. Thank you.

DR. DAVID PERLMUTTER: So where do they get this information? The book is called Brain Defenders, and oddly enough, the website is braindefenders.com. And that's where you can get links to where the book is available everywhere. And it's 16 countries already ha- have, Right

Published this book.

SHAWN STEVENSON: That was crazy to see.

DR. DAVID PERLMUTTER: And all the benefits that you talked about, all the, the perks or whatever you, what, you know.

SHAWN STEVENSON: The bonuses.

DR. DAVID PERLMUTTER: The bonuses. The bonus round. Yeah. So again I really appreciate being here today. Thank you.

SHAWN STEVENSON: Yeah. Me too. I appreciate this. And by the way, just your presence alone, and even seeing the pictures that you showed me on your boat, and you saw me just conjuring up those memories of fishing with my grandfather.

It really has inspired me to be more proactive at getting those nature inputs, and I need to go fishing.

DR. DAVID PERLMUTTER: Yeah. I'm gonna be watching for a text from you- Yeah ... of an image. And I bet it happens this summer. I wanna see what you catch.

SHAWN STEVENSON: Yeah. Yeah. Thank you so much for coming to hang out with us, and much more to come.

Thank you.

DR. DAVID PERLMUTTER: Thanks Shawn.

SHAWN STEVENSON: The one and only Dr. David Perlmutter, everybody. Thank you so much for tuning into this episode today. I hope that you got a lot of value out of this. Brain Defenders is essential reading. This is essential for communicating with our families, our friends, our communities, and having this as a resource.

Again, now we have a huge breakthrough in understanding neurodegenerative diseases that are truly breaking down our families and our communities, and we have the ability to do something about it. And so getting educated is of the utmost importance right now, and I appreciate you so much for tuning into this episode.

And also just sharing this interview, sharing this conversation can change somebody's life and the trajectory of their livelihood. And so please share this out with somebody that you care about. Share this on social media. Help get the word out about this, because there are solutions, but we have to stop this madness.

We have to change the trajectory of where things are going, because if we don't do something now, Alzheimer's and other neurodegenerative diseases are going to continue to decimate our communities. All right? This is our opportunity to make a difference. So take a screenshot of this episode, share it out on social media, send this directly from the podcast app that you're listening on to somebody that you care about, and let's keep upleveling things.

I appreciate you so much for tuning in. We've got some epic masterclasses and world-leading experts coming your way very soon, so make sure to stay tuned. Take care, have an amazing day, and I'll talk with you soon