Introduction and conference context

So today we have just a wonderful guest. We have Doctor Austin Perlmutter who is a who is a medical doctor, an expert in brain health. And frankly, he's a very brave individual.

And what I really respect about you all, well, there's multiple things, but one is I really respect. You came out about your usage of psychedelics rather publicly several years before. It was cool to do that.

And then I love that you're doing a do it a research project with with ayahuasca. I think that's such a wonderful plant medicine. And so it's it's an honor to be here with you.

So thank you for being here. Yeah, I'm excited for the conversation. And so this is a unique interview because you and I are here at first physically together, which is not usual for these interviews.

And then second over at an anti-aging conference where you just got off stage. And so I got to be there taking notes on all the things we can do to improve our brain health as we help reduce the risk of Alzheimer's disease and improving and optimize our brain is your specialty.

So I'd love, I'd love to get some of the high level notes from your talk. And then we'll we'll dive into there later. Then if we have time. I'd love to talk about specifically what you're doing with ayahuasca.

I think that's such that's such wonderful medicine. And if we have time, I'd love to go into that with you. Well, you know, I've had the honor of getting to participate in many Doctor Talks summits over the years, and the reality of it is there has never been a better time to have this conversation, because what we're seeing right now is an incredible gap, a mismatch between what we know about what we can do for our brains and what people are actually doing, and the outcome of that is incredibly high rates of preventable brain conditions.

So just to put this into context for a moment, if we think about what we see around the planet right now, what we're seeing are epidemic rates and brain specific conditions, and Alzheimer's is part of that.

Now, roughly 60 million people around the world have dementia. The majority 70 plus percent of those have Alzheimer's dementia. Beyond this, we know that there are many other pieces in this spectrum that gets us to Alzheimer's disease.

And so roughly 1 in 3 people after the age of 85 will have Alzheimer's, but another 1 in 3 people will have mild cognitive impairment. So what that means is if you live to 85, you're going to have by the law of averages here, some degree of cognitive impairment.

And what I would say is the majority of this is something we can work on. Now, not every case may be preventable of Alzheimer's, but every case can be acted upon.

And the most important thing to understand is that if we're going to do anything for these cognitive diminishing diseases, whether it's Alzheimer's or MCI, mild cognitive impairment that comes years before it really requires us to right now, take ownership over this and start to create a strategy to enhance our brain health for the moment and into the future.

The other correlate to this, I'll say, is, while Alzheimer's is incredibly important, I have lost two family members, two grandfathers to Alzheimer's disease.

It is so painful. It is only one part of the larger spectrum of brain related diseases that we're seeing right now. And I've spent a lot of my time thinking about this overlap between cognitive issues and mental health issues, because

it is not the case that Alzheimer's exists in one brain and depression exists in another brain.

Alzheimer's risk and the lifestyle gap

And somehow there's no overlap. What is so important to understand is that we have all of these pathways that link brain conditions, like Alzheimer's and mental health conditions, and there's so much that we can do right now to act on those pathways using lifestyle modification, which, especially in the case of Alzheimer's, is the single best studied intervention anybody can do.

I love how you said that. So in Fred the room he says, look, here's the best studied things you can do to help prevent Alzheimer's disease and cognitive decline.

They're all lifestyle. You may not like that, but they're all lifestyle. I love that you said that because it's so powerful. That's so true. What are some great lifestyle things people can do to reduce their risk of Alzheimer's disease? Right. So what do we know?

Well, The Lancet puts out a report every year, and it talks about some of these factors in terms of what is driving the rates of Alzheimer's disease. What we do know at the high level is that the lifestyle factors we want to pay attention to are going to be prioritizing sleep, exercise and stress reduction, dietary modification and air pollution exposure, among other things.

But these are all things that we can intervene on right now. Now, each of those in isolation sounds like, okay, whatever. I've heard that stress is bad, but people don't understand that having chronic levels of stress is a major risk factor, not just for Alzheimer's, but for heart disease and for early death.

And yes, for mental health issues. Now, we'll say on that because people might say, oh, I'm stressed, but what can I do about it? I never tell people, don't stress.

You can't just force yourself not to be surprised that you're like, stress is a part of life. It is. It's a part of our lives. We need to find good stress as opposed to the bad stress.

And one thing I'll say, which is a little bit ironic because here we are, live streaming this conversation. Is that a top source of stress in the lives of modern day Americans?

And really around the world is over consumption of stressful media? So the irony here in me telling you something about what you're doing right now, in terms of being a driver of stress, is that, you know, too much of this may be a bad thing, but the key here is to find empowerment in the content you consume.

Absolutely. The majority of content a person consumes right now in its 11 hours, the day of media that people say, where's that? Where's that come from, that numbers, that so much time.

It's so much of your work and live a life when they spend 11 hours consuming media. To be clear, many people are consuming media while they're at work, right?

But if you think about what the break down is, it's a couple hours on social, it's a couple hours on TV. It's actually a lot of time paying attention to news in the form of radio, and then it's everything in between.

So radio turns out to be one of the biggest sources of media consumption. Really. Still many hours a day. But what I would say are the most important things to consider is not necessarily the source.

I know that there's been a lot of push against, oh well, smartphones or iPads or computers or TVs. It's the question of the quality of what is coming through that screen.

The screen isn't intrinsically the issue. Now we can talk a little bit about blue light and sleep, but generally speaking, when it comes to stress, it's not a question of the screen.

It is the question of what comes through that screen. It's like saying your grocery store is bad because that's where junk food lives. Well, the grocery store isn't bad.

It's the specific foods that you can find in that store that can be problematic. So key to this conversation and everything we'll talk about is modulating the inputs to improve the outcomes.

And what I mean by that is a little bit sciency is if you bring in better data, you get a better outcome. And so it turns out that the content we consume through our devices, that goes into our eyes and goes in through our ears, is a top source of data for our brains, for the better or for the worse.

And it's something we can do a lot about. So make sure you're consuming good content. So consuming good content and consuming what you said empowering content.

What are some other major factors. I mean you went into so many things for the successes. Can you talk about the successes? For sure. They're slowing us down.

Yeah. So so there's this framework that I have been talking about for, I guess around a year now, and it's the success framework. And the reason I developed this framework is the understanding that while there are so many variables that influence brain state, everything from the food that we eat to the exercise that we get to things like heavy metals in our environment, that most people would benefit tremendously by simply understanding some basic things that they can do right now that have been evidence based and shown to not only protect brain health now, but protect brain health in the future.

So improve how you think, how you act, and how you feel right now, and also improve those things in the future. So the six as we started with the first one and that would be, well, I guess stress.

We talk about stress. We talked about screens. I also would say on the topic of stress. Nature exposure is a hugely undervalued way to improve brain health and decrease stress.

Can you cite the Michigan study? I love the Michigan State that you should. Michigan study. Sure. So there are a number of different publications that look at the role of nature exposure on decreasing stress, both in terms of subjective or psychological stress and stress markers like cortisol and things like high blood pressure and things like heart rate variability.

And all of this seems to indicate that spending time in nature decreases stress pathways. But to make that really consolidated, there was a study that was published out of Ann Arbor, Michigan, where they wanted to ask this question of, do you need to go out into the wilderness for a week in order to get benefits to the decreased effects on stress and what they found is in as little as 20 minutes once a week.

There were significant decreases in salivary cortisol, which is really interesting from just being in this urban natural environment. What we're saying here is, as I will say with everything I discuss, is that while it is always interesting to focus on the extremes and say, oh, well, you have to do this exact exercise or take this exact supplement, that the most beneficial thing for most people will be the easiest things to get going.

And so nature exposure is a cost effective and generally effective intervention to decrease stress pathways. Important because chronic stress increases inflammation, it damages neuro metabolism and it damages neuroplasticity.

So acting on that is one of the best things we can do to decrease those risks. So in just 20 20 minutes a week, 20 minutes a week, we're not talking about having to go on a full Outward Bound trip.

Although if you choose to do that, go for it. And how much nature exposure was this? Was this like walk in a park? Yeah, exactly. An hour in urban park.

Again, what I will always say, and what I would make very clear here is some is better than none. Whether it's

exercise or better sleep or nature exposure.

Stress, screens, and nature exposure

Doing some is better than nothing at all. But if you're trying to get to a threshold effect in terms of benefits from nature, I think the first threshold starts at around that 20 minute mark.

There have been a number of studies showing differential effects at different amounts of nature exposure. There's an interesting one out of Stanford where they had people go on a 90 minute walk, and what they showed was that that amount of nature exposure was associated with decreased rumination, meaning people didn't pursue over concerns around the past or the future when they had that much, nature.

And it was associated with alterations in brain, imaging in terms of pathway activation. So I think you know, you can say, well, the ideal amount of stress or stress mitigation from nature is going to be 120 minutes a week or 150 minutes.

There's data for all of these things, but if you're somebody who doesn't get any nature in their life, start with the 20 minutes and go from there. Don't worry too much about running the nature marathon and doing the full week in nature.

Before you get started. What are some of the other sources of stress? Stress is one of them. And you said we can't get rid of stress, so we have to mitigate it.

Being outside is a great way to do that. You also said, I love how you had a stress protocol, which involved a time for mindfulness, exercise, sleep and retirement time with loved ones.

But the nature, the nature study of, Michigan was really where was that published? So this is out of Ann Arbor, Michigan. I think it was a University of Michigan publication.

Okay. Really, really interesting. So what are some of the other assets? Yeah. So let's go to the next one. Let's talk about sugar. Sugar is is sugar makes me so mad.

Yeah. So, so a question that I like to ask people is, do you think sugar is toxic to the brain? And people will say. And those who are tuning in live can answer.

Is sugar toxic to the brain? The answer I most likely get is yes. And yet the reality of it is that our brains run preferentially on sugar. Now, there is an important differentiation here because there is a difference between added sugar in our diet, which is bad for your brain, and the sugar in your bloodstream, which at stable levels over time is necessary for good brain health.

And I'm going to say this again your brain runs on sugar. Now, some people have heard about things like a ketogenic diet, the idea that your brain can run on ketones.

It is true that the brain will preferentially use ketones. However, in order to get to the levels where you're actually seeing some of the things people tend to talk about, we're talking about many, many days of fasting.

And so what I would emphasize here is that the goal here is not to worry so much about not having any sugar in your body, but rather trying to mitigate added sugars in your body and trying to pay attention to how much fluctuation variability there is in the sugar that reaches your brain.

You mentioned three things that that sugar in the brain, how it negatively affects our brain. I think you mentioned neuro metabolism, neuro immunity and neurogenesis.

Yeah. So neurogenesis or neuroplasticity. These are the three pathways that are involved. We can also talk about its effect on vascular function. There are many different effects, all of which are pretty negative in terms of

specifically added sugar consumption.

But one thing I'll say here is when we look at the research around sugar consumption, there is one food that has been consistently at the top of the do not consume list because of the sugar, which is a it's actually not a food, it's a beverage, which I'm not trying to trick people here.

Technically, beverages are in the food category. And the reason for that is if you think about why sugar is so detrimental when we consume it in an added form, it's because of what it does to our neuro immunity, because of what it does to our neuro metabolism and what it does to our immune system and our metabolism in the rest of our body.

So added sugar in the context of a sugar sweetened beverage, doesn't come with fiber. It doesn't come with anything that slows the absorption. Right. And so this is why the research has been very consistent, that sugar sweetened beverages consumption is linked to things like certainly all the forms of metabolic dysfunction, type two diabetes, heart disease. Fine.

But when it comes to the brain, higher rates of depression in people who consume more than a couple cans worth of sugar sweetened beverage a day. And it is a risk factor for the development of depression, something like Alzheimer's disease.

So if there was any food that I would say is the top food to avoid, and this is not something that is in the integrative medicine camp and not in the conventional medicine camp.

This is well-established. There's no value to consuming added sugar. Absolutely. And the sugar, as you mentioned, the soda, it's sugar. It's high fructose corn sirup, which is even worse, which is quickly metabolized in the fat with no fiber.

So it spikes your instance, basal blood glucose. And then, if you're looking for a food to avoid, I think it was Doctor Casey Means shared with doctor Mark Hyman that over looking at millions of data points, you're the number one food.

Number one. Food, food, food. Spike. Blood sugar. Oh, you. Oatmeal was up there, but it was actually Skittles. Skittles was the worst. Skittles. It's just it's basically it's sugar.

It's it's corn sirup. It's high fruits. Of course, it has all these nasty things. There's a bunch of food coloring and no fiber. So. So Skittles spiked blood sugar worse than any other food.

So. So I don't know if we have a sponsorship on this from Skittles, so we just lost it. I hope Skittles is its sponsor. It's I really want people to stop eating Skittles.

Oh, you know, it's interesting just on the food topic, you know, in your talk, you said, listen, it's about time we realize Americans are sick and that that's the average.

And we need to look at around why. One of the reasons why is our food supply. It's about darn time we get mad that there's no healthy food around us. It's about time we get mad that it's really difficult to eat healthy food, especially if you have young children.

And I thought it's like I said, I was like, preach, brother. I was in the back pumping my fist like, yes, it's a message. We need a lot of people don't know that.

In 1985, two large cigaret companies, Philip Morris and, R. J. Reynolds, who have Marlboro and Camel, bought large food companies, including, Post Cereal, Nabisco, which owns an Oreo.

And then two years later, they bought Kraft Foods. These are giant food companies. And then their food scientist from tobacco, the tobacco scientist started saying, well, how do I make Oreo taste better, make it more addictive

and less expensive?

And they start to suck it out nutrients and putting it in addictive chemicals. And then the other food companies, you know, it's it was a war at that point, right?

An arms race. So they they did the similar things because of Oreos more addictive. Now they're getting more market share. Now other other cookies have to add their addictive chemicals and so our snack food from today is not the same thing that it was in the 80s, which is and you can see this in people if you go to the beach now, people are overweight or obese.

I'm sure you probably seen pictures of people on the beach in the 70s. People look pretty, pretty healthy and thin. And so our food has been engineered by very smart people who are seeking short term profit, and they have designed the food to be addictive and dangerous.

And it's really sad. And that's our current state of affairs. I think, you know, there's a tendency in these conversations to say something like, oh, well, you know, it's just people have been exercising less and they've been eating more calories.

And what you're alluding to here, which I think is a very well substantiated fact, is that billions of dollars of research have gone into making foods more palatable.

And personally, I don't think that this is a malicious attempt to do anything. It's rather saying there was a race to the bottom in terms of trying to sell the majority of product and keep people consuming that product day in and day out.

And the outcome is unfortunately, people's health collapsed when we talk about metabolic disease. So coming back to your point about Casey, so Casey means some of you may know she is one of the co-founders of levels.

I have a full length podcast with her if people are interested in our conversation. Isn't she wonderful? She's my new hero. She and her brother are so brave to come out and say the things that they've said and published their book.

I really admire them. So. So just to come back to this, though for a moment, what what Casey has done with levels, this company that looks at CGM, specifically looks at the technology monitoring it is these being able to pull these very large data sets to understand whether people are, you know, actually getting the type of metabolic changes with their food that they expect.

I've used the CGM multiple times, and I want to address a question here that was brought up on the Instagram Live, which is, thoughts on CGM. So I had said a couple of years back, you know, I'm in favor of CGM.

I think they're very helpful. And some of the feedback that I received around that was actually it's a problem because people who don't need that information are getting scary data, and it is going to be, in aggregate, something negative.

And this is actually still kind of the conventional medical, proposal as to how CGM should be used, which is in people with diabetes.

Sugar, processed food, and metabolic health

That's the initial way that they were. Use a continuous glucose monitor. Here is the reality though. We have between 88 to 93% of Americans who now have at least some aspect of metabolic dysfunction, and between 40, 88 to 93.

Right. So there are two different studies published over the last five years. One was looking at specifically metabolic markers, the most recent one which was published more, only a couple of years ago, basically added on additional cardiovascular.

So I was looking at cardio metabolic health, and it showed that somewhere around 7% of people were actually cardio metabolically healthy. But if that's not enough, right.

Which is to say that almost everyone has some aspect of cardio metabolic dysfunction, the reality is that if we say that CGM are only relevant for people with diabetes or who are at risk of getting diabetes, well, we know that maybe 1 in 10 people has type two diabetes in the United States.

That number has gone up dramatically. But we also know that when you combine that with people who have prediabetes, which still translates to an added risk for Alzheimer's and mental health conditions, that that number climbs to between 40 and 50%.

So you're basically getting to a scenario where the average person has either diabetes or prediabetes. It's not scary. The average person has diabetes or freediving.

I mean, that's scary. That's maddening. I want to like, throw something that's crazy. It should be scary because of what it translates into as far as decreased quality of life.

And so in the end, expense we got to pay for that. Like when people are sick and they're on Medicaid or Medicare, like I don't want them to not have their insulin.

Someone's got to pay for that. You know, it's not working, I think is the reason why American life expectancy is the lowest of any high. It's been declining and been declining recently, and that we're spending more per capita than any other highly spent twice we spend twice to four times the amount of most countries on health care, and less on food.

And our health is worse. We spend more on health care than anybody else, and our on our life expense is decreasing. This is a problem. So so like you're a medical doctor, say let's say on this for a second.

I think the challenge is as follows. If you look at one subset of people, they will say, well, the American health care system is doing everything it can.

And the issue is that people have lost their willpower and food has become tastier, and they can't stop eating food. And also they're wanting too much Netflix, so they're not exercising.

And also they're stressed because life is stressful. And that's basically the reality. It's why people are sick that the the other variable here would be to say maybe people haven't lost their willpower in the last couple of decades.

Maybe the reason my rates of obesity have doubled in adults and have gone up fourfold in adolescents in the last several decades, isn't just because people lost their willpower, it's because things have happened systemically that have influenced our brain biology, so that we continue to make poor choices and that's where I side, you know, I don't think and I'll be clear on this.

I know lots of medical doctors. They are all doing the best job they can. The issue is that the tools available for modern medicine are incredible for acute complications of chronic diseases, and they're incredible for acute problems, something like breaking an arm.

The majority of a person's risk for developing chronic disease happens outside of the medical clinic. So even the best doctor in the world, if you walk in there and they tell you here is exactly what you need to do in terms of diet, in terms of exercise, in terms of sleep can have absolutely no power over a person unless the system that person lives in is optimized for health.

And unless that person is optimized for and cares about changing their health. So the bottom line here is we are progressively living in a system how, you know, kind of the dirty river analogy where everything around us is set up to make us unhealthy, and then we're blaming the individual because they're not able to get out of that river.

So we have to work on two sides of this equation. One is we create a healthier system, a cleaner river, and we empower that person with the tools necessary to ideally spend less time immersed in that toxic soup.

And you mentioned with the toxic soup, you mentioned our indoor air quality, which is something I regularly don't think about. But that's really you said this is the number one underestimated or underrated threat to your brain.

And so I got to have big notes on this indoor air pollution. If you talk about air pollution indoors and what we can do to, to to mitigate it the way it's going to.

So this is, this is actually one of the successes. So we're doing pretty well with SSL. So this would be to say the third is there's not necessarily a very explicit the goal is just to get all the S's expressed.

So we talked about stress. We talked about sugar. And we're going to talk about smoke. So here is a really important point. By and large the interventions that people think are important as it relates to overall health and brain health tend to be more active interventions.

So you have to take a prescription. You have to, get a surgery, you have to take a supplement, you have to eat a food, you have to exercise. The thing about air is it is a passive thing.

It is always in the background. You might eat 3 to 5 times a day. Not you necessarily, but a typical person. We take 20,000 breaths de and the quality of what is in that air is a major determinant of every aspect of our health.

And going back to the central premise here, it influences the brain's immune system, brains, metabolism and neuroplasticity. Research published out of primarily Mexico City demonstrates that higher exposure to air pollution correlates with activation of the brain's immune cells and inflammation in the brain.

Period. Air pollution correlates with inflammation in the brain. And they've seen this in humans and they've seen this in dogs. Why does that matter? It's because air pollution tends to be all around us, and it's something that we just trivialize.

Even in integrative circles, people don't pay enough attention. So we are sitting here right now in Las Vegas, in a hotel where smoking is happening in the lobby.

Sure is. There are a lot of other things happening in the lobby that may be not so healthy for people. But the bottom line here is that we kind of normalize the idea of being exposed to indoor air pollution, which is the top driver of air pollution exposure for Americans, without asking what is in that air and what it's doing to our health.

So what do we know? In the last five years, publications in some of the world's most preeminent journals, specifically Jama, the Journal of the American Medical Association, I've proven in association and I've actually shown in Mendelian randomization, which is an additional layer of support, that there is a connection between exposure to air pollution.

There are many forms of air pollution, but PM 2.5 small particulate matter being the most significant in terms of the research, is correlated with higher rates of depression and Alzheimer's disease.

This has led organizations like The Lancet to say that air pollution is a top driver of Alzheimer's disease, and what is so important about it is there is no debate and it is preventable.

We do not have to breathe toxic air. And each person who's out there listening, especially if you're in the United States, should understand that the majority of air pollution that you are breathing in is being generated by your activities in your car, in your home, and in your office.

So we have so much agency over it. And it's a hidden risk factor for not just brain health issues, cardiovascular disease, metabolic dysfunction, infertility, shorter lifespan, respiratory issues, the whole spectrum.

So smoke. If you see smoke, you know, I think what we learned in school was stop drop and roll or something at the fire instead. If you see smoke you should be thinking about decreasing that amount.

So what can you do about it? Yes, let's get the action steps. Here's what you should do about air pollution. First thing is to go to the most important sources of air pollution in your home.

For most people, that is going to be your cooking. Cooking generates a ton of air pollution. The most concerning of these are these particulates, these small particles.

There are a number of different forms of air pollution generated by cooking. There are gases that can come out specifically from gas stoves. But if you are seeing smoke from whatever you're cooking, you really need to make sure that you are ventilating it as well as possible.

That could mean opening a window. That could mean using any hood or event on your stove. But that can also mean perhaps you need to pay attention to where you're cooking things.

So cooking up that steak in your home that produces a ton of smoke without ventilation, that's probably not a good thing. This is not an argument about whether or not you should eat steak, about the eggs and other things that are, basically formed in the cooking of that food.

It's an argument about saying that smoke is in the cooking process beyond just being, you know, a carcinogen is actually a neurotoxin. You know what's interesting?

I went to a I was recently home for Thanksgiving and my parents, we went out to a nice restaurant where they had a smoke based. There's they're smoking their food.

I was a their smoked grill in the back and I said, oh, wow, it smells so nice in here. And then during the middle of the meal, it got really smoky and my eye started to hurt and my mother noticed it too.

I went to the to the desk and said, hey, it's really smoky here. The city. Yeah, we're having a malfunction with our our smoker back there. I said, can you open a window?

And they said, we're doing the best we can. I'm like, can you open five windows? This is really unpleasant. My my clothes smell. When I got home, my mother said, I'm never going back there.

But, you know, some people didn't notice it or they pretended not to, but, this this is everywhere. I mean, there's so much indoor pollution affecting us in so many different places.

So let's stay on the smoking for a second. If you see smoke, that is an issue. So the top source is going to be certainly cooking. But two forms of smoke that people tend to intentionally introduce into their homes are incense and candles.

I was so bummed when you said that because I really like I like a good, good smell. And people love incense. People love nice scented candles. Our hippie dippy tribe, right?

They're like, oh, I got to turn on the turn up. The instant we we had Palo Santo and all the other people growing up. And I think the bottom line to understand here is that if you are breathing in smoke, you are damaging your brain.

I hate to say it in that directive or fashion, but it is a basically 1 to 1 correlation where more exposure to PM 2.5 puts you at risk of developing Alzheimer's.

Now, you said incense was five times worse than cigaret smoke. Yeah, I thought, oh my gosh. So so let's be clear on this. What the researchers did is they basically burned, two groups of kind of, substances.

One is a cigaret and one is incense. And what they found is that the amount of particulate matter produced per

gram burned of incense was up to five times higher than what is produced from cigaret smoke.

So this is this is important. Obviously cigaret smoking is a very bad thing. People know this. People know that if you're smoking cigarets, you're at a higher rate of everything that matters.

So you if you're somebody out there who's smoking, I feel it is my obligation as an MD to say you should work on getting support for quitting, because trying to just do it on your own is usually not a good plan.

But the additional factors are if you are introducing incense into your home, many people will use it to cover up. Smells the same with kind of scented candles to say, oh, I wanted to, you know, create an ambiance here.

Indoor air pollution and smoke exposure

Scented candles or any candle that smokes is going to be a potent candle. We got a question on Instagram of even beeswax candles, you know, paraffin. So regular paraffin wax is made of oil.

You don't want to burn that. That's definitely bad. But the beeswax is that any better grade. So this is an opportunity to go to one level deeper beyond simply PM 2.5 or just smoke in general.

There are a number of other air pollutants that are in our environments that we need to worry about. One of those air pollutants are what are called VOCs volatile organic compounds, and people are familiar with some of them, like toluene, formaldehyde and others.

But when we burn candles, and specifically when we burn scented candles, we produce large amounts of these box. Now, what the research would say is, as it relates to the types of candles, paraffin being kind of the most common.

So that's a petroleum and the cheapest or the cheapest, right. So that it's actually made out of petroleum byproducts from kind of oil manufacturing, which yes or no, whatever you want to think about it.

But the reality is it probably is the highest amount of off gassing and producing molecules we don't want to inhale. Next would be soy. So soy candles are probably not quite as bad as the paraffin candles.

And the best that I've seen are probably beeswax candles. However, the point here I'm going to make is if your candle is sputtering, if it is producing a bunch of smoke and you can, you can change this by how much you cut the wick, for example, or whether the candle is being exposed to bursts of air.

You can see the amount of smoke. It's basically, smoke is, not fully combusted, combustion. So like there's a reaction that happens when you add oxygen with, burning wick.

And if it doesn't fully combust, then you're left with smoke. So you can modulate that by trimming the way you can make sure short wick. Got it. You don't want to sputter and candle, but just to kind of drive this home, I would say mitigate your air pollution exposure at home by making sure that when you're cooking, you're not creating too much smoke.

I would say that don't introduce additional smoke into your home in the form of incense if you can help it. If you are going to burn candles, I wouldn't go crazy with it.

Make sure it's in a well ventilated room. I would consider something like beeswax or maybe even soy to be superior to a typical candle. I would consider an unscented candle to be preferable to a scented candle.

I like the electric ones. I actually I brought two electric ones for my room. I'm so excited. They have a nice and they're good for sleep because they're not super bright, they're low level, they're transportable.

I can make colors. Electric candles, probably the best of all. But I just wanted to very quickly touch on other things

to be aware of is if you're vacuuming, you're actually often producing, oh, I love it up here with me.

It's not the vacuuming itself. It is if you're using a vacuum without a Hepa filter. Right. So you want to make sure that if you're sucking up those particles that are going somewhere and getting caught.

And here's the most important one. If you're going to empty your vacuum cleaner, which of course you are, don't do it inside. Go outside so that those particles are not going directly into your face.

Dust in general is unfortunately an air pollutant. Last thing on this front is air purifiers work Hvac work, but you need to make sure to change out your filter with frequency, and you need to make sure to match your purification technology so it's matched to the size of the room so that that smoke.

There's a lot to say around that. Oh, Larson air fresheners. I would just generally avoid her. Yeah. And our friend, doctor Heather Sanderson, who wrote the book to an Alzheimer's disease.

She recommends opening your doors and windows one hour a day to get fresh air in. And this is off gassing from paint in your home. And then and furniture cleaner just to get any toxins in your house.

So open your doors. One is a one hour day clean that cleans it out. That's really great. So so for the six S's we got, stress. We got sugar, we got smoke.

Let's go to let's go to sedentary sedentary behavior. Yeah. So let's talk about the basics. About one fourth of Americans get the recommended amount of exercise one out of four.

That is this is this surprising. It's a failing grade. That's I mean that's that that we're failing. We're flat out failing in physical exercise that this is true.

And what I would say around this, two things. One is we are doing this live on Instagram. So if people have questions they want to ask, feel free to do that.

And the other thing is, we have created this false dichotomy where the idea is if you exercise, anything less than the recommendation, it's not worth doing at all.

Any movement is better than no movement, walking is better than no walking. And actually, a powerful study showed just this year that walking around 10,000 steps a day is correlated with up to a 50% decrease in getting Alzheimer's disease.

So exercising for probably 10,000 steps a day can cut your Alzheimer's risk in half. This is the good news. It's really, really important. There's probably no single intervention that has been as well substantiated to decrease risk of Alzheimer's disease as movement.

The reasons for this are because it decreases systemic inflammation, improves systemic metabolism, enhances neuroplasticity. It upregulate molecules like brain drive, neurotrophic factor, which is always everybody's friend.

Moving your body is a good thing. But the thing I would say to people that they don't always know about is that we have been told that it's always aerobic exercise that matters.

You have to get out there and pound the pavement, put your running shoes on. What we're now learning is that resistance training, meaning weight training, may be equally important to programing our bodies and our brains for success.

And the reason is that when we exercise our large skeletal muscles, it actually produces molecules called myo kinds. Can you spell that, please? Myo me.

Okay, I am an s myo kind, so I kind of kind of muscle chemokines. Right. So muscle trump muscles. That's really

important because it takes us away from this idea that you should not skip leg day so that people don't mock you in the gym, but rather that you should not skip leg day because leg day is actually when you're getting the biggest bang for your buck in terms of these molecules that beneficially impact your brain.

So I think doing resistance training for 20 to 30 minutes between 2 and 3 times a week is key to a protocol that not only optimizes brain health for today, but protects brain health tomorrow.

Because we also know that skeletal muscle mass is protective of brain health and also is associated with longevity, meaning people who have more muscle have stronger grip strength, who are generally stronger, are protected against things like age related decline in overall function and cognitive decline.

So on the topic of leg strength, there's a great study on twins and female twins, and it was a ten year longitudinal study. And, they brought the twins into the laboratory, you know, do you smoke with your food?

Like, what's your income like incomes related to health. And then they measured their leg strength, and then they brought them back into the lab ten years later, measured their memory, measured leg strength.

Turns out. Turns out leg strength. Those who had stronger legs had less or less, less Alzheimer's disease. Basically, they had healthier brains. Stronger.

So these are these are twins, both monozygotic and di psychotic twins. The twins who had stronger legs had a healthier brain a really great a really, really great science.

So exactly. Don't skip leg day. It's really important. Your muscle is like a savings account for your brain health and muscle. You have the more you kind of put money in a way for a rainy day.

I love this great analogy. Your muscle is a savings account for your brain. Yeah, definitely definitely definitely prioritize your your muscle. Okay, so we've got two to go.

Let's do. We're going to talk about sleep. And then the last one is going to be substances. Actually substance is always important. So we'll leave that one for last so that we can really, end on a really interesting topic.

But sleep. So I say this all the time, which is that if there was one thing a person was going to do to enhance their brain health today, it would be to improve their sleep.

And the reason I say this is because if you look across the entire spectrum of brain related diseases, what you'll see is that better sleep predicts better brain outcomes.

More important than this, though, is the understanding that not everybody is going to want to change their diet overnight. Not everybody wants to go to the gym.

Not everybody wants to sit and meditate for 30 minutes. However, everybody wants to get a better night's sleep. Nobody wakes up in the morning after a solid nine, eight, nine hours and says, oh my gosh, what a waste.

I really wish I would have stayed up. I feel so well-rested and what a regret I have about not watching another season of Of Love Is Blind on Netflix, so sleep is critical and sleep is enjoyable, and sleep is probably the quickest way to take your brain health from where it is right now to a better place.

Not to mention people who sleep better or at lower rates of developing Alzheimer's disease. So this is super, super important. Now, how would you know that you have issues with sleep?

Most people will have some sort of a symptom of something like daytime fatigue. You'll find yourself drifting off as work. You'll find yourself being told by your partner, you know you're waking up in the night, gasping for air.

You're snoring too much. You find yourself just generally sleepy all day. You don't feel well-rested. These are all

signals that something is going wrong and we've kind of learned to just overpower.

Right? You wake up really tired, so I just need more coffee. This is important data from your body. I'm not opposed to coffee. I'm not opposed to caffeine.

But would you don't want to do is use those molecules to mask an underlying sleep issue. So what are some of the most important causes of people getting poor sleep?

Many of these are lifestyle, and some of these are kind of a function of lifestyle variables. So some of the lifestyle things that lead to poor quality sleep are going to be things we've already discussed.

High levels of stress can absolutely compromised sleep, especially if that stress comes late in the day because it's telling your brain it is not safe to shut down.

Think about this in order for your brain to feel comfortable shutting down and doing all the amazing things that sleep does for us, it needs to know you're not going to be eaten by a grizzly bear, but your brain can't differentiate between a grizzly bear and the fact that somebody said something mean to you on Instagram at 11:00 at night, or you saw something on TV that's happening in another country, that seems really scary.

So if you're telling your brain, your ancient brain, that there is something in your immediate vicinity, whether it is or is not, and it interpreted as a risk to your health, it is going to keep you up.

What does that feel like? Well, it feels like anxious thoughts. It feels like high levels of stress. So I would say this you can't necessarily fix stress overnight, no pun intended.

But what you can do is ensure that if you're going to have stressful interactions, if you're going to be consuming stressful content, that you try to prioritize having that earlier in the day and not right before you go to sleep.

You mentioned this with you, with your partner. Right. I'm the person who likes to have conversations when we get into, into bed and talk about all the different parts of the life that didn't quite get time to.

So I'm the I am the problem. It's me. To quote friend Taylor. I insist if you have relationship conversations, do those in the morning when you're well-rested, in a good mood, very hard to solve relationship challenges when one or both you are upset or tired.

It's extremely difficult and the changes you resolve usually don't stick to it. When you're with, say, look, this is important. We're gonna do this first thing in the morning when we're both happy and well-rested after coffee, and then solve it.

Solve the relationship issues because they're important and you need to put your best mind on it. Not right before bed. Right. And I say this as somebody who is, a frequent culprit of making this mistake, let's go back to this point being that your brain is going to sleep better when it feels like you are safe.

So other signals that it is safe is going to be darkness. Right? So you want a dark bedroom. Now, if you are somebody with balance issues, you're an elderly person.

You may want to have some lights in your bedroom, but make sure those lights are low, meaning down by the floor. So that you're not necessarily getting that light directly into your eyes.

That's really key. But generally dark is possible. Also quiet as possible. So come back to this basic idea. Does your brain think it's safe to go to sleep?

Loud noises keep you from falling asleep for a good reason, because historically, if you're living in a cave and there's a loud noise, there's something you need to deal with.

So if you're having lots of loud noises in your bedroom, which could be because your partner snores, or it could be because you're living somewhere that has a lot of traffic.

Some ideas around this would be you can help to soundproof your room. Things like carpets can actually be beneficial, but one that I use is a white noise machine.

I travel with one that was one of my suitcases, one upstairs in my hotel room. You can even just download one on your phone. Although I find I don't know if you've had this experience.

There's this weird anomaly where if the pattern repeats over and over enough, you start to hear things in the pattern. So with the lower quality apps, you'll actually start hearing stuff.

Oh, so I like the brown noise. So the brown noise is a little bit of a darker to deeper, richer sound. That's great. On the phone. It's actually quite loud.

I would say, that I also have a sound machine. It's kind of like kind of like the size I like those deep sounding ones. They're not. It's not a repetitive track.

It's just kind of a that's what you want.

Exercise, resistance training, and brain health

I think if they're not expensive, you know, it's like maybe 30 or $40 to get the actual machine. And we use it every night. Yeah. I think it's super helpful. Do you like sleep masks as we travel?

It's crazy to me that hotel rooms, I buy a hotel room so I can sleep. That's the primary function, you know, there's lights on the ceiling. Who thought that up?

Why is there loud lights right above my bed, blinking when I'm trying to sleep? There are so many things that happen when you go into a hotel room, that you have to work on.

One of them is going around and unplugging everything. Yes. My hotel room where we're staying has three TVs that I have to make sure are turned off. It has a TV in the bathroom because, of course, you need a TV.

If, you know, say, come on, just like daily, like you come into your room and just on, say, I don't want it on, ever. Why does it automatically come on, we're allowed to rant here for just a second.

When you're on the airplane and you've already paid for the ticket and you still have to sit there and listen to the advertisement, and there's no way to turn it off, I feel like that's unfair.

I've had the TV in front of me on an airplane come on every ten minutes and I keep on turning it off. So I can, like, so do my reading. That comes back on, turn off, come up.

I'm like, why is this television coming on? I was just befuddled. If you or somebody you know has the answer to these questions, make sure to reach out.

But to go back to where if you or if you can turn this off, if you can turn off the television on my on the back of my seat or or in my head or the lights in my hotel room, please let me know.

So going back to this, you want a dark room? Turn off the lights as much as you can. You want a quiet room. You want to decrease all the noise exposure.

The other things to consider, though, are what are signals that are telling your brain to stay up. And so we talked about stress. Right. Just general psychological stress.

But if you're getting content that's coming to you in the couple hours before bed, that's only one piece of the puzzle. The other ones I would consider maybe the biggest one is caffeine.

So caffeine is a drug. It is the most commonly used psychoactive drug in the world is a drug that I will use each day. However, what we now know is that because caffeine has about a six hour half life, that you really need to be cautious about caffeine consumption.

That might mean, for some people, not consuming caffeine after even something like 10 a.m. because oh my gosh, either they're slow metabolism, slow metabolism, or they're just sensitive to it.

A recent paper actually just came out, and it showed that there are these kind of age, dependent changes in caffeine metabolism. So by the time you get around 60, your metabolism may actually slow a little bit, which is important for people who are listening in and wondering, hey, feels like coffee affects me differently.

Pay attention to what I would say is, if you're struggling with sleep, one of the worst things that can happen is that you use caffeine as the crutch.

So meaning you wake up tired, you drink caffeine all day, and because of that, you don't get good sleep that night. And you never break the cycle. So I would say 2 p.m.

is a reasonable threshold for most people, but you might bump that up earlier and earlier and realize that tea can have a lot of caffeine. Realize that chocolate dark chocolate contains caffeine.

These are all things to think about, so careful with caffeine. The last point that I'm going to make here, which actually gets us to the last of the six S's, which is substances, is the role of alcohol before bed.

Now, I don't know about you, but what I have found in my interactions with Homo sapiens humans on the planet Earth is that it is more socially acceptable to consume alcohol later in the day, right?

So the person who wakes up and drinks, some alcohol first thing in the morning, we might be concerned about alcoholism. It's actually one of the diagnoses.

It is not a cognitive enhancer. It will slow down your performance for the rest and set your day off in the wrong direction. If you start the day off with a whiskey and a cigaret, you're probably going to be doing unhealthy things throughout the day.

That that's a good point. But what I what I would say, which is interesting, is that in terms of the timing of consumption of alcohol earlier in the day is beneficial because alcohol has a consistent and potent effect on disrupting sleep architecture.

So some people have this idea that as long as you are unconscious, you are getting good sleep, and that's just not the case. So being unconscious is not equivalent to getting good sleep.

Sleep has a very interesting architecture where you'll go between non-REM and REM sleep. You go through these amazing phases of sleep, and each of these phases has a different role to play.

So, for example, REM sleep may be more important for memory or sorry for, emotional stabilization. Whereas non-REM sleep may be more important for memory and for lymphatic drainage.

So the point here is you don't just want to be unconscious. And that's what many people use alcohol for. So while I'm not saying that you should, kind of partition out your whiskey or wine or beer to the 8 to 9 a.m.

window, what I am saying is, if you're planning to consume wine or any form of alcohol, doing it before bed meeting hours before bed is much better than this idea of a nighttime nightcap that became super popular, or is still is very popular. Yes.

And then I used to drink a lot of alcohol in college and then in graduate school. My brain performance and my work performance has dramatically increased.

And since I stopped drinking, since I stopped drinking wine with dinner, that just stopped drinking alcohol, period. I feel so much better. I sleep better, I'm a nicer person.

First couple years were hard at Christmas with family. Not having alcohol and wine with everybody because it's fun. But now I'm just. I feel so much better.

It's not worth the tradeoff to me to to drink a glass or two of wine to either fit in or to enjoy it. I just feel so much better when my brain is working.

Oh, little did I love this. If you ever go to a work meeting and everyone else is drinking beer, drink coffee because your brain's getting faster. Everybody else is getting slower.

Like what I like whenever these business meetings, turning on the time of day, I think on the lunch part. So these lunch meetings where, you know, if you go out with friends and then, if there's business, you're talking and everyone's drinking, drinking beer or cocktails, I drink coffee and I get super smart while everyone else is getting dumb.

It's lots of fun. My hack would be to ask for a club soda with bitters. Now there's a little bit of sugar, there's a tiny bit of alcohol, but it is, by and large, club soda with flavoring.

I think there's still a very important psychological social construct where having some sort of a beverage includes you as part of the, the opportunity.

That's a good one. I'm going to try that. As for club soda and bitters, it looks it looks like you're drinking it while you are drinking, just like there's not too much alcohol, just not alcohol.

But let's so let's say on this one, this is the last such substances. I think alcohol is the most important one for people to be aware of. And I think that it is.

It is really important for me to say that excess alcohol consumption is absolutely a risk factor for dementia patients coming into the hospital with alcoholism, they have something called alcohol, dementia.

They have alcoholic dementia because alcohol is a neurotoxin. It also has some correlations with basically becoming deficient in certain types of vitamins, specifically B vitamins that are necessary for good brain function.

So one thing we see is the more people consume alcohol, the more likely they are to have deficiency in key brain nutrients, and the more likely they are to have things like atrophy and basically dementia as a cause of that alcohol consumption.

Now, what I will say here is because I want to be as, kind of research based as possible, large scale data analyzes have not been consistent, showing the correlation between alcohol consumption and increased rates of dementia.

Remember the studies showing alcohol was good for your heart? And so the people got such mixed data around alcohol and what it's doing to the brain and body.

Yeah. So there was a really big study that came out in South Korea not too long ago. And what it showed was that people who consumed a mild to moderate amount of alcohol were at a dramatically decreased risk for developing Alzheimer's and dementia.

What? Before we dive into this, I just want to be clear. My overall position would be that if you are going to consume alcohol, it is between two or less drinks a day.

If you are a meal and one or less drinks if you are a female based on the data we have for not negatively impacting health, including brain health. But if you're somebody who does not consume alcohol, it is 100% a reasonable to basically not start consuming alcohol for brain benefits.

And I would say there is this trend towards moving away from alcohol consumption and towards other ways to enjoy, socializing.

Sleep optimization and alcohol effects

And I think what needs to happen is a little bit of a groundswell, because one of the things that has been, described in this research, which shows that, again, someday, that people who drink a little alcohol actually have better, cognitive health outcomes is what's called kind of a sober person bias, because certain people who choose not to drink alcohol may do so, not because they don't want to consume alcohol, but because they're not in those social scenarios.

Interest and social interactions are about the most proactive thing for brain health. So the abstinence bias or the kind of sober bias would indicate that may be one of the reasons why we see people who don't drink any alcohol.

Having worse brain health outcomes is because of the reasons why they are not consuming an alcohol. Thank you for describing that. So my position is probably none is best if you're going to drink maybe once a week and maybe limit it to 1 or 2 drinks, that one night of of the week.

That's probably that's probably not going to hurt you too much. But my my assumption is if it hurts you a little bit Monday, probably best not to do it at all.

Right. What's the optimal amount of Twinkies? Probably zero a week if you have half a Twinkie once a week, is that going to kill you? Probably not. It's going to affect your health, maybe just a little bit, but I think it's better without.

But the important thing is choose your battles, right? So if alcohol is really pleasurable for you, then do it in a reasonably healthy way. I'm not telling you what to do. I'm not. Try to take it out of your life.

I think for optimal brain health, probably zero is probably the right call on this, and hopefully we'll get some good data to see if that's true or not.

Yeah, one thing I said earlier that I heard from somebody recently, which I really like, is if you're going to have a meal, then do dessert or a drink, but not both.

I love that choose one because we know that neither is probably good, but we also know that people want to live, to interact, to try things. And so for me, sometimes I will have a glass of Pinot noir because I live in the Pacific Northwest and it's a delightful glass of wine.

But if I'm going to be doing that, I'll make sure that what else I'm doing during the day really supports brain health. So I love that you said that. So we're in Vegas and so people tend to overindulge and and doctor pretty much said, listen, if you're going to do at night do a dessert or alcohol, but don't do both, I thought that was great.

And I'm sit next to my, my, my partner, doctor Josh Hellman. He says, but but what about desserts with alcohol in them? Right. I thought I thought that's that man's thinking.

That's what we want to do, right? Can I get them both in the same deal? And I will also say on this front, if you're going to have an alcoholic beverage, don't get something that's blended with added sugar, right.

That's just clearly not good for anything. Here on the strip, you'll see people with the oh my gosh, towers of sweetened icy beverage. So corn sirup and corn sirup and booze, terrible for the bridge.

I'll just comment one more time on this because we are getting some comments on the Instagram Live where people are saying, you know, this is still confusing.

I think there are two ways to slice this. One is to say, we're going to pick an absolute and say, alcohol is bad and you shouldn't drink it. But if we're trying to be honest about what the literature says, it's not as clear. Right.

And so I think it's unlikely they really going to find in the next couple of decades that drinking alcohol is good for brain health. I think the data will probably because mechanistically it makes sense tell us that really less is better.

However, at this time, the available research that I've seen doesn't say that if you're drinking a little bit of alcohol, then you absolutely have to stop for brain health.

I think it's just one of those things where we need to learn more. And as it stands right now, it falls in the bucket of if you're going to do it, do it in a conscious and moderated way.

And stay tuned because, you know, we've seen some stuff around coffee where certain people have said or certain research shows that maybe coffee good, maybe coffee bad.

And there are a number of reasons why this may be the case, but people have been drinking alcohol for thousands of years, so chances are it's not going to go out of fashion completely.

I think it's just being conscious about the understanding of, this is one of those things that maybe, in aggregate, doesn't have a good effect. There are two mechanisms here I'll just bring up in terms of why, certain types of alcohol may be better or worse than others. Yes.

One is we've already discussed the social piece of it. So socializing is essential to brain health. It is, based on the data from the Harvard Study of Adult Development, the single most important risk factor for having worse health.

And conversely, the single most important variable for better overall health and happiness is the strength of our connections with other people. Alcohol is a social lubricant, I won't deny that, but often it is, you know, not 100% necessary.

It's just something that occurs in the places where friends are present. Some people, myself included, will still have some awkwardness in being the only person who doesn't order an alcoholic beverage.

So I think that there is still that component as to why there may be a mechanism, a benefit, which is the social connection piece. The other piece is that certain alcoholic beverages contain molecules that are influencing our brain health.

And so, for example, if you drink bitter, bitter beer or just beer in general, bitter molecules actually activate, endogenous GLP one pathways. Fascinating, right?

So drinking a bitter beer actually has an effect on various hormones. Interesting. Some of which are related to brain health doesn't offset necessarily the alcohol, but it is a consideration.

Similarly, we know that, the red wine in particular has polyphenols in it. Resveratrol has gotten the most kind of critical acclaim as a potentially brain benefiting molecule hasn't necessarily stood up to the test of time.

On the existing side note on resveratrol, Doctor Davidson, Claire, who did the 60 Max episode on resveratrol 20 years ago, he's a key speaker at our event, which which is kind of fun.

Please continue. So what I would say here is the amount of research that you're getting does not offset, the alcohol, in my opinion, because if you were considering the amount compared to, I don't know, having, some spices or eating a colorful vegetable, it's nowhere near the same.

But there is a little bit of polyphenol and including, specifically resveratrol in red wine. So that may offset a little bit the effects of the alcohol.

So it might kind of ordering of alcohols, both in terms of my preference and in terms of value, I think red wine would be at the top of the list. And then you'd have kind of any sort of alcohol that is just a pure alcohol, and then you'd have all the alcohols that are combined with sugar, combined with anything that's a mixed drink.

So I would say if you're going to drink alcohol based on the research we have available, skip the mixed drinks that contain added sugar and opt for either, something like, a straight alcohol or something mixed with club soda, or just drink some wine.

And what are some other substances, that, that are affecting our brains. So I think that there's, there's a lot to be said for, beneficial substances, but generally I try to prioritize those that people are most concerned about.

One of those that I talked about today, which may or may not be relevant to those who are listening, is methamphetamine in terms of increasing brain inflammation.

So it's actually one of the mechanisms that we can see in the brain changes in people who consume, methamphetamine. So yeah, I think, you know, we start to talk about some of these molecules that are a little bit more of potent, drugs.

And often we would consider just purely drugs of abuse. What I would say, though, in the spectrum of what we've historically considered drugs of abuse and substances in general, is that psychedelics.

And, again, I'm not just advocating for people to go out and use psychedelics, but psychedelics actually may act on things like inflammation and metabolism in a positive way.

That is not to say, again, that just any use of psychedelics is going to be a positive thing for brain health. But what we're seeing from some of the research that is just coming out now, and some of the research that I'm actually involved with, is that certain psychedelics may actually act on beneficial pathways within our bodies that can have enduring benefits to our brains.

And what psychedelics are you talking about? Yeah. So so the research is still early, but some of the early data would suggest that as we look at pathways like metabolism and the immune system and epigenetics, which is a fascinating subtopic as to how various, things in our environment influence gene expression.

We've seen data for LSD, we've seen data for ayahuasca, we've seen some data for, psilocybin. That's magic mushrooms. So. Right. So psilocybin is the, is one of the active ingredients in several types of mushrooms.

But, DMT, which is, you know, basically a core component of what is found in ayahuasca, but is also found in other places in nature. Seems to work in part through activating a receptor called the signal and receptor.

Interesting. Which is interesting because it is an immune and metabolic switch. So point here mainly being that we are we're starting to have a better and better understanding of how various things in our environment, when consumed, act on our brain health.

Some of this for the better, for some of this for the worse. But when we can start to get curious about, you know, how what's going on around us is influencing our brains, we get so much of an opportunity.

I do want to bring this back here, because the conversation is really around Alzheimer's and what we can do for Alzheimer's, and coming back to something that I mentioned at the start of this conversation, by the way, people have questions.

Feel free to add those in the Instagram Live. We'll try to get to those at the end. The reality is that right now, your best chance of doing anything about Alzheimer's is fully in prevention.

There may be pharmaceuticals that come out in the next few years that change the game, but by and large, as we look at the data right now, it would suggest that your best opportunity to do anything about Alzheimer's is to take agency over your lifestyle.

And what do we know? It's the things that we've just described. So if you are somebody concerned about Alzheimer's, it is eating a diet that is similar to a mediterranean pattern.

Diet is the best study diet for preventing Alzheimer's. So that means decreasing ultra processed food. Eat increasing minimally processed food. It means exercising if you can. Each day.

I think that if you're able to combine some resistance training with that and that's amazing, it means working on stress pathways. So trying to bring in some stress mitigating processes in between diet, exercise, stress mitigation.

Right. Means working on sleep. Sleep. It means working on the substance exposure. And it means working on decreasing air pollution and smoke. So it's really these cornerstone tenants that we've been describing.

And what's so great about it is that there's something that everybody can do right now to act on these pathways that have been implicated in the development of Alzheimer's disease.

Many of these do not require you to go to your doctor. This doesn't mean you shouldn't see your doctor. But what it does mean is you can take agency over this today and start to make these changes to prevent Alzheimer's tomorrow.

So I'm like, I mean, I do a lot of healthy things to reduce the risk of Alzheimer's. Things like you, I do grandfathers who who had dementia when it Alzheimer's wanted dementia unspecified apart from dry cleaning chemicals.

He was a dry cleaner and so he was exposed to those chemicals for years. And so I'm thinking of things that I could do. So for example, I'm going to I do spend time outside in nature, but I'm deliberately spend 20 minutes a week at least and say, look, this is my time in nature brain.

Really enjoy this. Probably be 30 minutes, but just spend the time in nature. Say, look, I'm just going to round and this is going to help reduce cortisol.

So deliberately spending that time doing more resistance training, I do a fair amount of aerobics training, but adding resistance training to that to increase the Bdnf, that's another thing.

And then, I, I'm here in Vegas and, so I wasn't gonna drink alcohol, but now I can do the club soda with a little bit of bitters in it. I can I can look like anybody else, or I might just be drinking the bottle of water.

I got my big jug of water be like, look, you all are silly drinking alcohol. Drink water. Yeah, yeah, this is cool. It's got foam roller up in it. So I'm learning things that I could do for my health.

You mentioned, at the end of your talk, you mentioned that you are either involved with research or leading research with ayahuasca. Can you tell us about that?

What any data that you want to share about the benefits of ayahuasca and then what you're looking for. So this is a study that I'm working on. The, the the main people investigating.

It's actually, a medical student and UNM named Peyton Foster, who's doing an amazing job with this as well as others. Vikki, who is a PhD, and UNM and the basic background behind this is we need more tools for mental health in the United States and around the world.

What we currently have is not enough. What we know is from initial data, that psychedelics in the right, certain setting may be some of the most powerful tools available to decrease, potentially even risk for mental health conditions, but also decrease symptoms and potentially reverse certain mental health conditions, that otherwise are

not really treatable by conventional means.

So there are many different psychedelics. We're looking at ayahuasca.

Psychedelics, ayahuasca research, and closing thoughts

And the question that we're trying to address is what is the mechanism by which psychedelics, in this case ayahuasca, change our physiology? Because many times people think about psychedelics as only important because of the trip itself. Right.

So the altered mental status you get during a psychedelic trip, you say, well, I had these insights and now I feel better and that's it doing its thing.

But what we now understand is that for people who have these psychedelic trips, it may be more than just the psychological experience that matters, and that the psychological trip itself is a representation of changing neurobiology.

So the cornerstone pathway that has been isolated is central to psychedelics in terms of how they act upon our physiology. Is talking about serotonin receptors and basically serotonin receptors in the cerebral cortex and throughout the brain, and the idea being that psychedelics are going to act on the serotonin receptor.

And in doing so, are going to lead to downstream effects that have something to do with neurotransmission, that then improve mood. And so it is true that you get a transient release or a modulation and, neurotransmission like serotonin and dopamine.

And this varies kind of depending on the psychedelics. So, ketamine, for example, has a different mechanism of action than MDMA that's different from psilocybin.

But how do the enduring effects occurs? Why is it that, based on research published by Anthony Boces out of NYU, that people who had end of life depression using a single dose of psilocybin had improvements in depressive scores that lasted years after that, one dose?

I mean, you can imagine why Big Pharma doesn't want you to know about this because they sell you an SSRI kind of for the rest of your life. And instead one dose, one when this dose of psychedelic mushrooms with the psychedelic psychotherapist, in reduced depression for years, you can see why this is such a threat to the current profit making centers in mainstream medicine.

And you see that, you know, using psychedelics, you can have a different outlook on life. So that's kind of the psychological manifestation of our biology.

Like you think about things differently, but you think about things differently because your biology has changed. It is not as though you think differently, but nothing's different than your brain.

Something has changed, but the question is, where do those changes occur and how do they endure? And so two of the kind of frameworks that we're pursuing around this are alterations in the gut microbiome.

Really, and then alterations that we can measure through what's called epigenetics, which would look at metabolism, the immune system and a host of other molecules produced within the body.

So one of the hypotheses here is that when a person uses psychedelics, it influences their epigenetic expression, and in doing so changes the way their DNA is being used.

So that is getting to a core mechanism that alters who we are as people. And recent research that was published through a group, called True Diagnostic looked at the effects of ketamine, and they actually showed changes in epigenetic, ages in particular, subsequent to the use of ketamine in people with depression.

There's another study that was published by Dave Raybon and, Candice Lewis looking at how MDMA, changed epigenetics. And what they found here is that it did change epigenetics and that the epigenetic changes predicted treatment response from MDMA.

So our goal is to take this one step further. At this point. This is a full kind of like volunteer type project for me. So anybody would like to help contribute because we're literally just basically trying to pool our resources to collect and analyze this data.

Right. This is so interesting. I recently had my first psych, I was go experience a couple months ago, and I've been I've been wanting to try ayahuasca for about a decade, but just had it worked out, it finally worked out.

I had an amazing experience. I think it's a really healing, powerful medicine. I had a wonderful healing experience and I, I've never prayed so much and given so much gratitude in my life as when I sat on that mat for eight hours in the ayahuasca journey, and then it subsequently had a really positive effect.

People next to me or they had trouble with, you know, their girlfriend broke up with them. They've been depressed for six months. They felt better after that.

Other people were helped, were helped with childhood trauma where some people had sickness. Some people, it just transformed their lives. It's amazing.

And so I really want science to come in here, just demonstrate to people who are skeptical. Here's here's the recorded benefits of this. You may want to consider this or know about it and make it more, more easily accessible.

And I love that you're looking at gut bacteria because I ask as a key that people drink. And so it goes directly into the gut. So the idea that I was asking could affect gut bacteria to me, makes a lot of sense. That could be a huge benefit.

Things that improve our gut bacteria benefit almost every major system of the body because it affects our immune system, our brain system, our digestion.

And what we digest kind of affects what energy gets to different body parts. And so this could be so interesting. I appreciate you saying that. I will say that, you know, necessary disclaimer as an MD is that psychedelics are not a panacea and psychedelics aren't going to be right for everyone.

They are potent medications with significant side effect profiles, and they need to be part of the conversation for people. So I think we need to keep moving towards understanding how they work, who they're going to work for and how best to administer them.

I think we have overindex towards concern. I mean, there are I can't say how many hundreds of millions of people's lives have been cut short in just the United States as a reflection of the legalization of alcohol over the last couple of decades.

Now, it doesn't mean that there are no benefits to alcohol. We've already talked about that a little bit, but if we consider the kind of pros and cons here, we at the very least, I think should be more receptive to doing research around psychedelics, because the solutions we have right now for mental health.

And interestingly enough, now we're looking at psychedelics for potential Alzheimer's. So and so it is a much bigger conversation than just things like depression and anxiety.

This is potent medication, but it also acts on the core pathways that we understand are dysregulated across a wide variety of brain states. So at the very least, why would we not be curious about this and helps us support the research to understand how this works?

I mean, people forget psychedelics just be legal. Just flat out legal. In the 70s, if you were doing LSD research,

people come in, take a dose of LSD with a therapist.

They had less depression for three, six, nine months a year. And people are helping with alcohol ism. There's a lot of psychedelic research before is criminalized by Nixon when he just slammed the door on basically everything because the government got really scared, because when you take one dose of LSD and then you're different and you're different in a way that says government, I don't know if we want to be dropping bombs on people we don't know.

That feels out of alignment with with being a human being is taking my tax dollars, building a bomb and then dropping it on people in another country who I don't know, that doesn't feel right to me after two after people took LSD.

And so the government got really scared. It just slammed the door shut and then called anyone who was interested in it a bad person, or they called them names or said nasty things about them to make them seem unscientific.

And you remember just even ten years ago, people talk about psychedelic research and they were potentially, pigeonholed and not given tenure, or it looked really bad.

And now now psychedelic research is a cutting edge. It's a really wonderful time. I love that you're involved in this. Yeah. You had just a tiny bit of powder there, so I don't think it was ever fully legal.

It just wasn't being pursued into criminal act. It wasn't criminal. It was. So these substances were by default, legal until the government said, we think this thing that's helping ending, alcoholism after one dose, we're going to make that illegal.

That was that was by default. It was it was legal. So the other thing I'll just say here, because I do see the comment, is that there's a difference in mechanism for psychedelics.

So ketamine isn't always considered a psychedelic. You know, different molecules have different kind of effects and can have different potencies. And especially if you're getting them through a source that is not necessarily reputable, there is some risk intrinsic to this.

So what I would say is my position as of now is I'm a huge proponent of psychedelic research. I think psychedelics have an incredible opportunity to heal people when done in the right set and setting.

And I also want to just caution people that these are very powerful and potentially dangerous molecules. And so this isn't a kind of scenario where it's like, you should take some olive oil because olive oil is good for brain health.

Maybe we need to approach these molecules with respect. LSD is not olive oil. I'm not recommend psychedelics for anyone. I recommend people do your own research and then see what what what is what is right for you. What?

These are very powerful medicines. And by the way, ayahuasca is not a party drug. Do not take ayahuasca. I think you're going to go out and have fun that night.

It is a serious medicine and it's going to grab you by the horns and sit you down and force you to look at things. So I will ask is not what the you know, LSD can be a party drug, ketamine.

People take that party. I don't know why, but these ayahuasca is a very serious medicine and so don't take it willy nilly. It took me ten years to muster up the courage to actually sit down and do it. So I love you. You're involved in this?

Are you measuring inflammation? After my experience, I thought it'd be so easy to look at someone's inflammation a week before and then a week after and see what to do with crp.

And I say so. So we're looking at a host of different. So epigenetics is kind of a fascinating science because of the

way that it's set up. You're able to basically extract from a data set all sorts of different markers.

And those range from inflammatory markers to metabolic markers to age related markers to even basic things like lipids. So you're able to kind of look at, a huge number of different outcomes with a very small amount of data, which is amazing.

So it's just, you know, a fingerstick is able to give you this incredible, really amazing shit. That's wonderful word. I'd love to be helpful. I'd love to help.

Help fund some of this research. I really believe in it. I'd love to help contribute to it, I appreciate it. Fantastic. Well, this is such a great treat.

I so love to to I get to be with you in person. I love the talk that you gave. And then we got the highlights of it here, for the for this talk. So thank you so much, Doctor Austin Perlmutter for being here.

Thank you for your work in the world. Thank you for your courage. You know, years ago, coming out about psychedelics and your current research, on ayahuasca. That's really wonderful.

And I love what you shared in your talk. You shared. Look, our our food is making us sick. It's about time we get mad that it's. We're just surrounded by by food that makes us sick.

It's about time all of you kind of look around and say, look, this is not a healthy environment for us and let's do something about it.