

Announcer: Bulletproof Radio, a state of high performance.

Dave Asprey: Hey. It's Dave Asprey of Bulletproof Radio. Today's cool fact of the day is that blind people can hear what faces look like. Now, if that sounds a little weird, let me tell you why. When blind people use a device that produces different sounds when it crosses different curves and planes, uh, the same part of their brain lights up as you use for seeing people's faces, so blind people can create mental images of everything they hear, and those images are thought to be very similar to what you or I see in our peripheral vision. Uh, this is a pretty amazing thing you can do with neuroplasticity, but the, the mind will find a way.

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Before we get going on today's show, do you know about Bulletproof Upgraded Aging? This is one of the supplements I don't talk about very much that has an impact on the way the mitochondria in your body work. It actually changes the ratio of 2 chemicals in it so that you can have more energy in the cells, and it also helps you maintain regular blood sugar in a very dramatic way, as well as helps your brain function well at times when you might have excessive glutamates, in other words, when you've been dosed with Chinese restaurant syndrome from MSG. So, this is one of the supplements that just maintains a healthy brain. It's got 4 different mechanisms of anti-aging, and it's something that I've taken every day for several years now ever since we came out, and I, I really appreciate it. So that is Upgraded Aging, and if you haven't given it a try, it's totally worth it.

Today's guest is a professor of psychology at the California Institute of Integral Studies. He's the author of the number 1 international bestseller, *The Neurogenesis Diet and Lifestyle, Upgrade Your Brain, Upgrade Your Life, A*

Holistic Approach to Optimizing Brain Health. Now, already, you can tell there's got to be a reason that he's on the show, and the reason is, well, we're talking about brain upgrades. How can I not talk with him? And his name is Brant Cortright.

Brant, welcome to the show.

Brant Cortright: Thank you for having me. It's a pleasure to be here.

Dave Asprey: You're a really interesting guy because you look at brain health and neuroscience, but you also look at therapy. How did you get into mixing those things together because, usually, you get like sort of the softer therapy side or you get the harder like, uh, "I dissect rat brains" kind on the side, but you've, you, you're neither one of those purely? Wha- How'd you do this?

Brant Cortright: Yeah, that's right, I got into this really through consciousness and through really a kind of psycho-spiritual approach to psychology, and so really looking at every level of our consciousness, mind, body, heart, spirit. And although I've really been focused on psychotherapy for many ... a long time and also meditation, I've come to the conclusion that I actually have underestimated the role of the body and ...

Dave Asprey: Yeah.

Brant Cortright: ... particularly, the brain and that the quality of our consciousness is intimately tied to the quality of our brain, and vice versa. And so it turns out that there's been a lot of very recent neuroscience stuff looking at how some of these soft things have a huge impact on our brain. Particularly, this discovery of neurogenesis has been I think a real game changer in terms of looking at brain health and the whole quality of our life.

Dave Asprey: What is neurogenesis the way we're talking about it?

Brant Cortright: Good. So neurogenesis is the process of making new brain cells, the birth of new brain cells. It's the generation of new neurons. And it used to be thought that the brain stopped growing, stopped making new brain cells once we're in our early 20's or so, and, after that, it was just one slow death.

Dave Asprey: Now, I know you, you went to UC Santa Cruz, so you were still killing brain cells in your 20's as far as I understand it, right?

Brant Cortright: Uh, well, psychedelics?

Dave Asprey: (laughs)

Brant Cortright: I don't think they totally kill the brain, but-

Dave Asprey: That's a fair point.

Brant Cortright: (laughs) Yeah.

Dave Asprey: [inaudible] So, so that's just been proven, and, and that was only in recent time when we understood that neurogenesis happened, right? How recently was it when we figured that out?

Brant Cortright: That's right, the late 1990s ...

Dave Asprey: Yeah.

Brant Cortright: ... they discovered that, actually, we make new brain cells throughout our entire lifetime, and they didn't know what the meaning of this was until just a few years ago. So it turns out that your rate of neurogenesis is probably the most important biomarker ...

Dave Asprey: (laughs) Yes.

Brant Cortright: ... of brain health that some people have never heard of. So, a little rate of neurogenesis, that is, a little rate in which the brain's making new brain cells, is associated with cognitive decline, with memory problems, with anxiety, with stress and with depression, even lowered immunity. And the high rate of neurogenesis, that is, a high rate at which the brain is making brain cells, is associated with the opposite, with cognitive enhancement, with rapid learning, rapid problem-solving and with robust emotional resilience and with protection against stress, anxiety and depression. And it turns out that just about everybody can increase their rate of neurogenesis by about 5 times, probably even more than that because some of the science is lagging behind. And this difference in the rate of neurogenesis has a profound effect on the quality of our life.

Dave Asprey: So the, the reason that I, I was so excited to have you on as, as a guest is that there are hundreds of thousands of people listening to this right now, most of them are interested in, in increasing their performance one way or another, not just, you know, athletic performance or at work, but, basically, when you can perform better at whatever you want to do. If what you want do right now is sleep, then you'll have better performance in sleep. Like, like it's about doing [everything else] better.

But the impact of what you just said, "5 times better ability to lay down your brain cells when you need them, 5 times more brain plasticity," that's not a little change. That is game changing. That means 1 unit of meditation, if you're trying to learn to meditate. It means you could have 5 times more changes in the brain for the same amount of work.

Now, I'm lazy, very lazy, and I would rather get more out of 1 minute of meditation than less, and I think everyone listening would, too, and, and so tell me more about this "5 times." What do I have to do to get 5 times more neurogenesis for whatever I'm doing, whether it's any kind of training or just whatever?

Brant Cortright: Yeah. That's the million-dollar question. Let me tell you about 1 experiment they did. They took mice and they gave them, really, a holistic treatment. The approach of this book, it's a holistic approach to brain health, right, body, heart, mind, spirit. They gave these mice a holistic treatment. They didn't call it that. That's my word for it. They called it an "enriched environment," so they gave them a good diet, they gave them running wheels to exercise on, they gave them lots of novel environments to explore, nesting materials, a lot of other friendly mice to play with and meet with, and they found out that they increased their rate of neurogenesis by 5 times and that the part of the brain that grows new brain cells, the hippocampus, was 1/6 bigger.

Now, that's a lot of computing power. And these mice had big cognitive advantages over their normal neurogenesis rate peers and they had big emotional advantages as well, again, big protection from stress, anxiety and depression. So it turns out that it's the whole picture. It's all of it together that works, that body, heart, mind, spirit, by stimulating the brain in all of these ways, they all work together synergistically much more powerfully than if we just do it one at a time.

Dave Asprey: Uh, oh, this, this is something that we can focus on here. There are a huge number of people, including me because, um, I come from like a western scientific background, computer science, information systems, artificial intelligence, decision support, and you're supposed to only test 1 variable at a time.

Brant Cortright: Mm-hmmm (affirmative).

Dave Asprey: Like aren't you violating Science with a capital S?

Brant Cortright: Well, they've done both.

Dave Asprey: (laughs)

Brant Cortright: They have tested 1 thing at a time ...

Dave Asprey: Yeah.

Brant Cortright: ... and then they compared that with testing a few things at a time. So, for example, eating a particular food or, or, or running, for example, the brain will explode with new brain cells. It's a very powerful neurogenesis increaser. However, about half of those new brain cells die off pretty quickly. The brain

prunes them pretty quickly, unless you do other things such as eating other kinds of foods whose function is to increase the survival of new neurons.

Dave Asprey: So there might be synergies between these things?

Brant Cortright: Yes.

Dave Asprey: And testing only one at a time, it, it's like baking bread, right? If I was going to bake the flour and I was going to bake the water, and nothing ever happens, but if you mix them and then you bake them, magically, you get bread. Uh, is that more of the model that we're going down for the brain?

Brant Cortright: That's it.

Dave Asprey: Okay.

Brant Cortright: That's it exactly, that doing 1 thing is better than nothing, but doing several things, working at it from all these different perspectives ...

Dave Asprey: Yeah.

Brant Cortright: ... has this synergistic effect, yes, so that you get then close to a 100% survival rate of these new brain cells.

Dave Asprey: Okay. Tell me these goods. (laughs) I've got to know.

Brant Cortright: (laughs) Okay, so there's a chapter in the book on body and all the physical things we can do. There's a chapter in the book on the heart and emotional factors in this. There's a chapter on the mind and mental exercises, the mental things we can do, and there's a chapter on spirit and spiritual practices that also have, uh, an effect on this. But there's, uh, there's 1 chapter just on diet because diet is one of the most important dimensions of all this. So, you know, if you want to build a beautiful high-end house, you have to use high-quality materials, right?

Dave Asprey: (laughs)

Brant Cortright: You can't use rotting wood or decaying wood. You use high-quality lumber. And it's the same with the brain. We need to use high-quality building materials. So I think of this as really a twofold strategy. One is to decrease things that are neurotoxic and slow down the rate of neurogenesis.

Dave Asprey: (giggles)

Brant Cortright: And the other is to increase those foods and activities that accelerate our rate of neurogenesis. Otherwise, it's like stepping on the brake and the accelerator ...

Dave Asprey: Yeah.

Brant Cortright: ... at the same time.

Dave Asprey: What are the neurotoxins that we should avoid?

Brant Cortright: Good question, because we live in a really neurotoxic world, and we haven't known this until just the last few years, it's like we've all stumbled into this instantly.

Dave Asprey: Mm-hmmm (affirmative).

Brant Cortright: Right? 200,000 years ago, the brain got its, you know, this, this size in human beings, in homo sapiens, and it's just been kind of random development up until now. We didn't know that individual brain cells existed until a hundred years ago. So what increases the rate of neurogenesis and what decreases it? These are brand new things. Like, the past 5-10 years, I mean this is ...

Dave Asprey: Very new.

Brant Cortright: ... so new that most neuroscientist don't even know this. And, I mean, one of the reasons for writing this book was I've always thought like psychology is too important to be left to psychologists.

Dave Asprey: (laughs)

Brant Cortright: Like everybody needs to know about the stuff.

Dave Asprey: That's a great quote.

Brant Cortright: (laughs) And it's the same with neuroscience.

Dave Asprey: Yeah.

Brant Cortright: Neuroscience is too important to be left to the neuroscientists. Everybody needs to know the stuff. So 2 things that really decrease the rate of neurogenesis are bad, unhealthy fats ...

Dave Asprey: Yes.

Brant Cortright: ... and sugar and carbohydrates. Now, I know you this from Bulletproof diet. Um, the government guidelines around diet from the '60s on has been just the opposite, right? It's been low ...

Dave Asprey: Yeah.

Brant Cortright: ... fat and high carbohydrate. And we now know this is the exact opposite of what we need and that this original diet was based on not only bad science by [inaudible], but it was also based on failing to distinguish between good, healthy fats and bad, unhealthy fats.

Dave Asprey: Yep.

Brant Cortright: Bad, unhealthy fats are essentially oxidized fats, the trans fat, of course, but, basically, oxidized fats.

Dave Asprey: Which, which means heat, light or air, right?

Brant Cortright: Heat, right, exactly, exactly, where they go rancid. And so when those oxidized fats get into your bloodstream when they're absorbed, what they do is they oxidize the cholesterol in your bloodstream, and that oxidized cholesterol produces heart disease, produces atherosclerosis and it produces inflammation. And inflammation is one of the things that just slows neurogenesis to a crawl.

Dave Asprey: When was the last time you ate fried food at a restaurant?

Brant Cortright: Uh, um, it was a couple of years ago at this point ...

Dave Asprey: (laughs)

Brant Cortright: ... when I, when I started researching this book. I mean, I hate to say this. I used to love fish and chips.

Dave Asprey: (laughs)

Brant Cortright: I just used to love-

Dave Asprey: It tastes, it tastes good, but, man, for ...

Brant Cortright: Yeah. Yeah.

Dave Asprey: ... the brain? No way. (laughs)

Brant Cortright: I think I still love it, but I, I [inaudible] ...

Dave Asprey: Yeah.

Brant Cortright: ... right? We don't want to cook with vegetable oils. Right?

Dave Asprey: Uh-huh (affirmative), very important.

Brant Cortright: We want to cook with coconut oil, butter, ghee, lard, [aloe]. Um, we want to avoid cooking, uh, as you're saying, fried foods, um, and, instead, we want

healthy fats, so that means avocados, nuts, grass-fed beef, pastured chicken, wild-caught fish, um, pastured eggs and dairy.

Dave Asprey: I'd say we have some agreement on the healthy fat sources. Uh, those, those are all at the high end on the Bulletproof roadmap. And ...

Brant Cortright: Perfect.

Dave Asprey: And it's, it's interesting because you're one of the few researchers that I've come across with a, a good academic background who also talks about the spiritual effect of this, and so you, you talk about body, mind and, and spirit, uh, as well. And so where do you feel it first? Le- let's say you eat some of these neurotoxic oxidized fats of, say, corn oil, uh, canola oil, soybean oil, uh, you, you know, you have your fried onion rings or whatever, uh, at a restaurant that's been frying in that same fat maybe for days so it's entirely oxidized. So where, where do you feel it first? Is it, uh, like physical, or is it, is it like mental? Is it, is it emotional? Is it spiritual? Li- like what happens first when, when do you perceive this?

Brant Cortright: That's a question. It probably depends on each person ...

Dave Asprey: Yeah.

Brant Cortright: ... and kind of where the vulnerabilities are in their system, but it certainly goes into your bloodstream first and that, uh, creates inflammation in your bloodstream. What inflammation does is it chews up the inside of your blood vessels. Right? We, we need to be able to mount a healthy inflammatory response. But it's chronic inflammation that's the problem. That chews up the inside of the blood vessels. And the brain gets 20% of the blood. So, to have a good brain, you need to have a good cardiovascular system as well. So that begins to degrade the brain right there, so some people will probably feel that emotionally, some people will begin to feel it cognitively, some people will feel it spiritually, and other people will feel it physically, some probably all, all of those in different degrees. I think it probably just depends on each person.

Dave Asprey: It depends on each person?

Brant Cortright: You know, the other big problem in terms of food is sugar and carbohydrate. A high-sugar diet will cut your rate of neurogenesis in two.

Dave Asprey: Okay. Le- this is really important.

Brant Cortright: This is huge.

Dave Asprey: So, for people sitting at work listening to Bulletproof Radio, eating just one of those little sugar candies from someone's desk because they have food cravings, how much sugar are we talking about?

Brant Cortright: Um, it depends on how insulin resistant the person is. So, right now, it looks like about 80% of the American population is insulin resistant to some degree and some degree of glucose intolerance. That means they have higher levels of insulin than is healthy. And higher levels of insulin are toxic to every organ of the body. They have higher levels of glucose than is optimal. Glucose produces glycation end-products. It produces glycation. It's, it's a form of accelerated aging. That also degrades every organ in the body.

Dave Asprey: And, and fructose makes that worse than, um, fruit sugar, or high fructose corn syrup is, is worse than regular sugar for that, okay?

Brant Cortright: That's right. So, a good test for everybody to do when they get their yearly physical is called the hemoglobin A1c. And that's like a snapshot of your blood sugar levels over the last 3 months. And if it's at all elevated, you'd be well advised to get on a very carbohydrate-restricted diet in order to increase your insulin sensitivity and bring your blood sugar down because you can track cognitive decline and blood sugar levels just about perfectly. That's alarming.

Dave Asprey: It's interesting. I have a, a machine here at Bulletproof Labs, one of the, the human hacking piece of equipment. Uh, HbA1c is, is a really important metric for a lot of reasons. And if you have pre-diabetes or diabetes or insulin resistance, if you start using, say, Metformin, the diabetes drug, you get a 1% improvement. If you start exercising, you get another percent, so you get 2% from diet and drugs. If you use this machine for 10 minutes a week, it causes an 8.2% improvement in HbA1c. So it's not just-

Brant Cortright: I've [haven't] heard of that.

Dave Asprey: It's not just exercise. It's not just diet. It's not just drugs. It's the specific type of exercise has profound effects on a marker like that. So these are hackable, and just no one out there that I've come across has, has put together like this holistic thing. And you've definitely started looking at this in a holistic way. And, and, certainly, we, we share a lot of belief systems around this, and, and I want to figure out where we have some differences so we can talk about those, but we'll, we'll get there as we interview. But the idea that what if 10 minutes a week of weird exercise could do something that 6 hours a week of exercise couldn't do?

Brant Cortright: Yeah.

Dave Asprey: Uh, I, I think there's, there's hundreds of things like that out there that haven't been discovered or popularized.

Brant Cortright: Absolutely. Yeah, the science is just, it's emerging around all of this. So, um, the book goes into like 25 or 30 different nutrients that increase our rate of neurogenesis. So a big one of these are omega-3 fatty acids. So, omega-3s are made up of ALA, EPA and DHA. And DHA is the most important by far for the

brain. So the brain is made up of about 2/3 fats and, of that, 1/3 of that fat is DHA.

So they did an experiment where they raised monkeys on a low omega-3 diet and they raised another group of monkeys on a high omega-3 diet, and then they looked at their brains. And the monkeys on the low omega-3 diet, they had very simple, undifferentiated brains, and the monkeys on the high omega-3 diet had very complex, richly differentiated brains, almost like human beings, that omega-3s seemed to be tied in evolutionarily to the development of a larger brain in human beings, uh, eating a fish.

So we want to have a diet that is high in omega-3s. Probably most people could stand to take 5, 4-5 grams a day of omega-3s that are high in DHA, a high DHA content, and also are molecularly distilled.

Dave Asprey: Yeah.

Brant Cortright: Otherwise, we're likely to get mercury. And mercury is one of the most potent neurotoxins known outside of plutonium. I think it's the most potent neurotoxin there is.

Dave Asprey: Uh, there's, uh, there are some questions though because we talked about rancid and oxidized oils, and a lot of the fish oil in the market is not well-packaged or well-prepared even if it's molecularly distilled, and it's actually rancid when you take it. Uh, this, this is something that I've looking into for years and that, uh, if you look at people who are taking excessive amounts of omega-3, like they don't look so good. And, oftentimes, it's a quality issue and, sometimes, it's just too much of it, so how, how much is too much and how do you know if you're getting good omega-3s?

Brant Cortright: Um, well, generally, you can taste it, you can smell it.

Dave Asprey: Yeah.

Brant Cortright: If it's rancid, you can tell immediately. Um, Life Extension makes a pretty good one, and they've got pretty good quality control. Um, there's few out from Nordic Naturals that I think are pretty good. Um, but you're right, if you've had them for too long, even though they're in a capsule and, therefore, prevent it ... You know, oxidation is probably not going to happen too quickly, um, still, over time, they do ...

Dave Asprey: Yeah.

Brant Cortright: ... go bad.

Dave Asprey: And, and I, I say to people all the time, if the bottles are, are kind of dark, but they aren't fully dark, if you put it on the window sill, (laughs) that's a waste of money because ...

Brant Cortright: Yeah.

Dave Asprey: ... light still penetrates it. And this stuff is light sensitive as well, so I, I tend to keep mine in the fridge or at least on the table if it's a bottle that I'm, I'm using. But if I buy 5 bottles at a time, I'll keep it in the fridge because I really, really believe that oxidized omega-3s are particularly bad.

Brant Cortright: Yeah, that's very interesting. Yes. Yes.

Dave Asprey: Okay, what, what about vegetarian omega-3? Uh, what are the-

Brant Cortright: That's an, that's an interesting question. So a lot of people say take flax oil ...

Dave Asprey: Mm-hmmm (affirmative).

Brant Cortright: ... or chia seed, and it turns out that it doesn't work.

Dave Asprey: No, (laughs) not at all. Sorry.

Brant Cortright: (laughs) It actually doesn't-

Dave Asprey: Sorry, vegans. (laughs)

Brant Cortright: Yeah. Yeah, so trying to increase ... It's like so little gets converted to DHA ...

Dave Asprey: It, it's about-

Brant Cortright: ... because that's strictly the ALA form, and something like 5% or less [crosstalk] ...

Dave Asprey: I think it's, it's 1-

Brant Cortright: ... gets converted.

Dave Asprey: It's a [43] to 1 ratio, so like 140/3 of it gets converted from [memory], and, uh, it's almost none, so you have to eat ...

Brant Cortright: Yeah.

Dave Asprey: ... like a 100 grams of, of (laughs) flax oil to get like 1, uh, 1 or 2 grams of, uh, the equivalent from fish oil, and you will not look good if you eat that much ALA.

Brant Cortright: Yep, they've, they've actually looked to people who have tried to increase their DHA levels through, uh, flax oil, and it's not been successful.

Dave Asprey: Yeah.

Brant Cortright: However, if you're a vegetarian, there's a new form of algae ...

Dave Asprey: Mm-hmmm (affirmative).

Brant Cortright: ... algae-derived, which is EPA. And that does convert to DHA.

Dave Asprey: Right.

Brant Cortright: So, if you're a vegetarian, you, you have to get the algae form of omega-3s. And that will convert. That actually will raise the blood level of DHA.

Dave Asprey: That is absolutely-

Brant Cortright: [crosstalk].

Dave Asprey: Yeah. And, and I also use krill oil, which is my preferred source of it. But it's, it's one of those things where, okay, we're talking about all these cool things you do for your brain and, no, we're not only talking about the type of fat, we're talking about the source of the type of fat, but we're doing that because it seems to make a big difference for how our brains work, right?

Brant Cortright: Mm-hmmm (affirmative). Absolutely right. That's right.

Dave Asprey: Okay.

Brant Cortright: They looked at people who ate fish 1 to 3 times a week, and they found that they had 14% more gray matter in the higher processing centers of their brain, unless they ate fried fish ...

Dave Asprey: (laughs)

Brant Cortright: ... in which case there was no difference between them and [normals].

Dave Asprey: Wow.

Brant Cortright: So, yeah, how it's cooked and the source is important.

Dave Asprey: Uh, so you call the people who don't eat fish [normals]? (laughs)

Brant Cortright: (laughs)

Dave Asprey: Is that like, is that like a [psychology term]?

Brant Cortright: (laughs) No. No. People [having just] normal brain, um, function.

Dave Asprey: I thought I heard [inaudible] in there somewhere. [inaudible]. (laughs)

Brant Cortright: (laughs) You know, I think we probably ... At this point, most people are using 70% or 80% of their brain capacity. We live in such a neurotoxic world.

Dave Asprey: Yeah.

Brant Cortright: And there are so many things we could do that we aren't that most people are operating ... What we think of as normal ...

Dave Asprey: Yeah.

Brant Cortright: ... it's fine for getting by in everyday life. What we think of as a healthy brain is actually a brain that is well below ...

Dave Asprey: Yes.

Brant Cortright: ... [that's possible].

Dave Asprey: Well below? Uh, and, for some reason, we get used to that. We're not very good as a species at, at seeing the, the possible things there. And one of the, the things that I recommend is, you know, [slam] some healthy fats into, uh, into your brain and, and just like feel for 1 day, oh, whoa, this what I'm capable of. And, that's I think why I opened the Bulletproof Coffee Shop is I wanted people who hadn't done that, because if you just feel 20% better in 1 day, like, wait a minute, I want that 20% every day, so, now, I have to make other changes in my life, whether it's sleep quality, uh, changing exercise or relationships, I don't know, but at least feel it at once.

Brant Cortright: Yeah.

Dave Asprey: Uh, is there are a way that you recommend if, if someone is to come in, uh, tomorrow and said, "Look, I, I want to see how good my braid can really feel," like, like what would you tell them to do so that they could just feel the difference as fast as possible even if it's not sustainable?

Brant Cortright: Um, my own sense is that, for most people, to have, uh, uh, an ongoing sense of this, it takes a couple of months. And the reason it takes ...

Dave Asprey: A couple of months? Okay.

Brant Cortright: ... a couple of months is because it takes that long. It takes between 4 and 6 and 8 weeks for new brain cells to mature and come online. So that's why, for example, antidepressants take 4 to 6 to 8 weeks to work. Right? It used to be believed that antidepressants worked through increasing your levels of

serotonin. Right? There's this whole serotonin deficiency theory that, um, causes depression. It turns out that theory is wrong. And the pharmaceutical companies know it's wrong. But the way the antidepressants work is that they increase our rate of neurogenesis.

Dave Asprey: Interesting.

Brant Cortright: And, and, uh, but when you take an antidepressant, your serotonin levels go sky high within a few hours, but there's no change in mood for 4 to 6 weeks. That's because it takes 4 to 6 to 8 weeks for new brain cells to mature, get integrated into the, into to existing circuitry and to fully come online.

Dave Asprey: So, so then that, that means I have to ask, uh, what will be an unpopular question. But does that imply that maybe I should go on an occasional course of antidepressants just so I can get more brain cells and then just go off of it when I'm done?

Brant Cortright: Well, that's very interesting because [crosstalk].

Dave Asprey: Uh, by the way, I've never done that.

Brant Cortright: Yeah. Yeah.

Dave Asprey: I don't advocate it, but I'm starting to think maybe, maybe I should just do a little bit Wellbutrin every now and then as a smart drug. Like I ...

Brant Cortright: Well, the-

Dave Asprey: (laughs) ... I've never heard of this before, but-

Brant Cortright: Yeah. So, yeah, this is, this is how the attention got put on neurogenesis. They discovered that the way antidepressants work is to increase our rate neurogenesis and that a low rate of neurogenesis is what is involved in depression. So it turns out though that antidepressants, first of all, they only work in less than 50% of the people who take them, and they come with a slew of side-effects, for example, loss of libido. Most people experience, uh, loss of sex drive, and that's depressing in itself.

Um, they also, they, they create, um, less serotonin receptors in the neurons so you become more and more dependent on them. So, the, the side-effects are not great, but there are many, many natural substances which also increase our rate of neurogenesis and without side-effects. There are a number of studies that show that omega-3 fatty acids at about 6 grams a day is actually more effective than SSRIs, than Prozac, than antidepressants for, for, uh, working with depression, but with none of the side-effects.

Dave Asprey: And that would be if you also stop eating fried stuff and inflammatory fats at the same time, I'm guessing? Like the, the synergistic thing applies there?

Brant Cortright: That's right.

Dave Asprey: Okay.

Brant Cortright: We want to do as much of this as possible. Again, the book goes into 25 or 30 of these nutrients. Omega-3 is just one of them. If you do omega-3, you'll increase the rate of neurogenesis by 40%. That's quite a bit. However, many of those new brain cells die off pretty quickly, unless you do other things. For example, hesperidin, hesperidin is a bioflavonoids ...

Dave Asprey: Mm-hmmm (affirmative).

Brant Cortright: ... that appears in citrus fruits. And its main function is to keep new neurons alive, baby neurons alive. So, um, green tea is another one, green tea, the extracted green tea, um, the ECGCs, make, um, ... They're not only an antioxidant and anti-inflammatory, but they also are like Miracle-Gro for brain cells.

Dave Asprey: Uh, people make fun of me because I take like an entire handful, as much as I can hold in a handful, of supplements. I take about 1 to 2 of those in total a day. Uh, I'd ... It depends on what day and what I'm taking, but I, I'll do north of a hundred, uh, north of a hundred capsules especially when I travel or if I'm under more environmental stress, which increases oxidation. But you can feel the difference in how your brain works when you do things that protect the brain cells so that they die off like that. Like I, I am a different person because I do that sort of stuff. And you're, uh, you're naming some of the things that I take. And there's, there's lots of others and, um-

Brant Cortright: Good. Yeah, quercetin

Dave Asprey: Uh, if you have other ones listed in your book. Quercetin?

Brant Cortright: Quercetin ...

Dave Asprey: Okay.

Brant Cortright: ... apigenin, luteolin ...

Dave Asprey: Mm-hmmm (affirmative).

Brant Cortright: ... some things that aren't so well-known, um, ginseng.

Dave Asprey: Bioflavonoids are critically important. Rutin I'm guessing is in that list?

Brant Cortright: Um, rutin ...

Dave Asprey: Uh-

Brant Cortright: ... I think is one of those things that may increase BDNF, but it hasn't yet been confirmed that ...

Dave Asprey: Aah.

Brant Cortright: ... it increases neurogenesis, but it may.

Dave Asprey: Uh, it's so, it, it's fascinating, and I don't think that there's a case for most people to take all of these things. Uh, I'm like all into the synergy thing. I find that stacking things works really, really well, so that's what I do when do want to formulate stuff, but ... for my own things. Like, look, if there's evidence that it's going to do this and it's probably going to help other systems, I'm willing to go to the trouble and the inconvenience of opening another bottle and putting another capsule in the stack of things I'm going to swallow because I get such a big change in my life from it. Otherwise, I, I'm kind of lazy. I, I'm an anti-aging guy. Uh-

Brant Cortright: Yeah. Absolutely. Why not? I mean, what's the downside? [crosstalk].

Dave Asprey: I might have an expensive pee. And, in fact, I, I think might have been quoted as having the most expensive pee on the planet, at least that's my goal. Like I, I'm okay to filter out the extra vitamins that my body doesn't take as long as the filtering process isn't hard on the liver and kidneys. It turns out that it's protective of the liver and kidneys for most of the substances.

Brant Cortright: Yeah, that's right.

Dave Asprey: What, what about 1 antidepressant that's been used for dendritic sprouting, uh, dendrites or neurons in the brain for people listening? Uh, and this is something I've used for many years. It's deprenyl. It's a mild, uh, MAO inhibitor, uh, formerly used at high doses as an antidepressant, used by anti-aging people for at least 20 years as a smart drug. You take a very small dose of the stuff, and it, it affects cognitive function. Uh, have you ... Did you write about this? Have you experimented with it or are you familiar with the research?

Brant Cortright: Yeah, only a little bit of the research. And I didn't go into that because I didn't go into any, um, drugs or medications ...

Dave Asprey: Okay.

Brant Cortright: ... that increase neurogenesis other than the antidepressant. The antidepressants, you know ... So neurogenesis happens in the hippocampus, this one part of the brain. And hippocampus is this interesting structure. It's like a

crescent moon or a curled silkworm, and 1 end of it is involved in emotion regulation, particularly the emotions of stress, anxiety and depression, and the other end of it is involved in cognition, in memory processing and its spatial relationships and the body.

So it turns out that SSRIs and all the antidepressants only increase neurogenesis along the emotional side of the hippocampus. So you don't get a cognitive boost ...

Dave Asprey: Aah.

Brant Cortright: ... from antidepressants because it doesn't increase neurogenesis along that axis. So that's another reason why we want to do a lot of different things because some things increase it on 1 end, some on the other end, a few things increase the entire length, but we want the entire length to have a high rate of neurogenesis.

Dave Asprey: Now, the, the timing of these things seems to matter. My first book is called The Better Baby Book, and it was what are all the things that you can do to have smarter, healthier kids, uh ...

Brant Cortright: Yeah.

Dave Asprey: ... hopefully without autism, which was a particular concern, uh, for, uh, for my wife and I. And it ... What we did definitely seemed to work. And there was lots of research behind it, but my belief is that you have the most leverage, uh, really at around the, the first trimester, even like before conception, removing the neurotoxins you talked about, making sure that healthy fats are in place, and, and then if you get that stuff right, when the brain is growing, you have the most neurogenesis happening because the brain is really only 2 cells and, you know, it keeps growing and growing. So is it more important for a pregnant woman to eat the, the way you're talking about it in your diet or more important for someone who's 20 or 70? Like, when, when do the benefits hit you the most?

Brant Cortright: Great question. Um, it turns that the babies rate of neurogenesis depends on the mother's rate of neurogenesis. [crosstalk]

Dave Asprey: Aah, [let all the mothers know].

Brant Cortright: If the mother has a high rate of neurogenesis, the baby will have a high rate of neurogenesis. And it also works in terms ... because you're right, the first 2 years is when 90% of brain growth happens, and that first 9 months in utero is incredibly important. So there's also been a research to show that the mother's level of stress has a big effect on the shape of the brain of the baby. So you know we've got these 3 brains, right, the reptilian brain stem that runs the

body, the mammalian limbic system responsible for emotion, and the neocortex, which in humans is the most developed, abstract, thought, language.

Well, it turns out that if the mother is stressed or anxious during the pregnancy, she gives birth to a baby with an enlarged reptilian brain and a smaller neocortex. Whereas, if the mother is at peace, she feels safe during the pregnancy, she gives birth to a normal baby with a large neocortex and normalized everything else. So children like this begin life at a big neural disadvantage.

And this also continues for the first few years. If the mother is stressed, the child, it's almost like the survival circuits get activated and the higher processing centers don't have a chance to develop. It's like survival has to be ensured first. So this is one of those things that I think should be on the front page of New York Times. It's just incredible, the effect that it has on the child.

Dave Asprey: Uh, one of the things that drives me nuts is ... I, I came to this realization a while ago. We restored, my wife is a, a physician, um, restored her fertility. We had 2, 2 children at around age 40 without fertility assistance when she was infertile (laughs) before that. And I, I came to the same realization as you, wrote a book, widely published it, and I think we sold about 8,000 copies.

Uh, and The Bulletproof Diet has sold north of a 100,000 copies with a lot of the similar knowledge in it, but, uh, for some reason, uh, I don't know what it is, but it, it, it's like, as a species, what's going to happen in 20 years is really hard to use it to take action on it today. And the idea is, is you're going to have to, a child 20 years from now if you take your extra omega-3s when you're pregnant or a child who's who's smarter or healthier or more equipped to deal with the world or just better off in, in all the ways a person can be better off, but connecting those dots is just hard for us. Uh, do you have any advice for, for people who are, are, you know, struggling with the decision about, um, "Do I, do I invest in stress reduction or nutrition early on in life?" Like which is more important? Like, like share some knowledge here. (laughs)

Brant Cortright: It, it's all important.

Dave Asprey: (laughs)

Brant Cortright: That's the thing. It's like we want to reduce stress and we want to increase those omega-3s. Certainly, for a pregnant woman, taking extra omega-3s seems hugely important ...

Dave Asprey: Very.

Brant Cortright: ... because there's a of DHA in the diet just to give that growing brain a lot of basic building blocks for sure, and it makes for more complexity like in this monkey experiment. Right? Complexity is good when it comes to the brain. We want to see complexity. Um, but, you know, at any time, this can also happen. If

you're in your 20's or 30's, you can also increase your rate of neurogenesis by 5 times ...

Dave Asprey: Okay.

Brant Cortright: ... or in your 40's or your 50's. In fact, in old age, you can increase your rate of neurogenesis by 3 to 5 times. And that was before they discovered that many of these nutrients increase the rate of neurogenesis. So the scientists are still behind this. Maybe you can increase it 8 times, maybe 10 times. It's like we don't know ...

Dave Asprey: Yeah.

Brant Cortright: ... what optimal brain functioning looks like right now. We're on the verge of a neural revolution.

Dave Asprey: If, if you think about what would happen if, if you ... There are synergies here and, and there are certainly anti-synergism toxins where they amplify each other and there are synergies and techniques like this. So let's say that meditation and stress reduction or mindfulness give you some bonus points here. Exercise of some flavors more than others give you some other bonus points and then having the right nutrients, and so the right foods and the right nutrients on top of that, and then maybe with the right pharmaceuticals, so, if some these ... Okay, if this doubles it and this triples it, well, together, do you get a 6 times advantage? Like you said, no one's ever measured this.

Brant Cortright: Yeah.

Dave Asprey: But whatever it is, when you look at even with the orders of magnitude improvements in your ability to lay down your brain cells, new brain cells are there as a repair mechanism to keep you from declining with age and as a performance amplification mechanism to normally enhance their survival. So we're cheating, like we're hacking that system to say, "You know what? Uh, if the normal, in the normal course of human nutrition and stress, we're going to double the number of these cells, but then half of them are going to die," and we change that and say, "We're going to double and then triple the number of cells and we're not going to not let them die," all of a sudden like, wait, my brain is fundamentally different than it was before.

When people do this, what types of things do they experience in that whole range of things? You talked about body, mind and spirit, so walk me through what happens if, if someone has a lot more brain cells? Like what, what gets easier?

Brant Cortright: Um, everything gets easier. Like-

Dave Asprey: Yeah.

Brant Cortright: It's like when you're living on a higher level, everything is easier. Again, if you're doing some kind of spiritual practice, that seems to have a quite robust effect on our rate of neurogenesis. There's mental factors as well. There's emotional factors. Like, like stress, for example, it slows down the rate of neurogenesis, chronic stress.

Dave Asprey: Yep.

Brant Cortright: Um, although, you know, you know, there's 2 types of stress here. It's just like fats.

Dave Asprey: Mm-hmmm (affirmative). (laughs)

Brant Cortright: There's good stress and there's bad stress. And good stress is short term and moderate. That makes us stronger.

Dave Asprey: Yeah.

Brant Cortright: That's a challenge to us. It's like it brings forth new capacities. We need a certain amount of stress. If we don't have stress, then we're just [sloppy]. You know, it's sort of like exercising. When, when you're pumping iron, you're stressing the muscle, but then you stop, it breaks down and it builds it up even stronger. And so it's the same with short term stress. When we get a break from it or if it's moderate stress, that helps us become who we are more, and that increases the rate of neurogenesis. But that's not the kind of stress that most people suffer from. Most people suffer from chronic stress.

Dave Asprey: Yeah.

Brant Cortright: That is an, an extreme stress. An extreme stress can actually shrink the hippocampus, kill the brain cells. That is neurotoxic. Um, being always on line, always available 24/7, email, is the, the work project okay at work, am I available, it's like that ... am I going to have a job, am I going to have enough money? It's like that kind of stress slows down the rate of neurogenesis and it, eventually, also creates heart disease, diabetes, um, inflammation, um, all, the whole host of diseases of civilization that we see.

So we need to have some way of reducing it or taking the time out to just let our body relax, whether it's playing games, whether it's walking in nature, whether it's meditation, whether it's exercise of some sort, something to allow the parasympathetic nervous system to come and let us relax just like, aah, to let the body establish a new homeostatic balance. So that's really important.

So, when we do this, we get, again, every level gets better, and when you're living at a higher level, you go, "Oh, my God, how could I have done them before?" When you're living at a lower level, you don't really realize it because

it's like the, the instrument that you used to measure it can't measure it.
(laughs)

Dave Asprey: It takes, it takes energy in the brain and it takes, uh, functionality in the brain in order to drive awareness of, uh, "Well, I wasn't running as well as I could." And the biggest example of this that I've come across is I, I bring CEO clients through this program called 40 Years of Zen. It's 7 days of intensive neurofeedback training, uh, that changes the way your brain pretty intensively because you're spending hours a day getting feedback directly electrically. And when I work with those clients on a custom protocol using the right fats, using things that trigger BDNF, you know, they can handle twice the amount of input to the brain before they just hit a wall and like, "I, I can't do it anymore. There's no, no more results from this."

And this is essentially Turbo Meditation. If, uh, if you want to meditate and you're doing these practices, the meditation becomes easier and the meditation then becomes more effective because it's easier, so you spend less time meditating and you got more benefits, which reduce your stress, which makes more meditation easier if that's what you want to do or it frees up that stress capacity so you can do something else. It's one of those investments that really gives you a compounded return pretty briefly. And it's completely changed how I perform in, in what I do because, when you have that little excess brain capacity, you can use it to make even more brain capacity.

Brant Cortright: Yeah. Yeah, that's perfect. That, there's a virtuous cycle where ...

Dave Asprey: Yeah.

Brant Cortright: ... you just get better and better and better. That's right. That's right. It becomes self-reinforcing. It's like when you start living a neuro-healthy lifestyle, you feel better and better, and then you want to feel better and better, you want to do more things to feel better and better.

Dave Asprey: Exactly. You talked about, uh, [inaudible] [hormetic] stress or the healthy stressors that make you stronger versus unhealthy, chronic stress, and you've touched on exercise, and you mentioned running a little bit earlier. What are your exercise findings in the research you've done?

Brant Cortright: Yeah, that's interesting. So, any type of exercise is good for the body, and so yoga, weight lifting, aerobics and all that. But, when it comes to neurogenesis, it looks like the only kind that's effective is aerobic exercise. Aerobic exercise is anything that gets you breathing fast and your heart rate up. So running, walking quickly, biking, walking up a mountain, swimming, fast dancing, anything that gets you breathing hard, that is like, um, a very potent stimulator of neurogenesis.

Dave Asprey: Any research on sprinting or high intensity interval training versus long distance slugging out the miles?

Brant Cortright: Yeah. Yeah. They haven't done that research yet.

Dave Asprey: Okay.

Brant Cortright: That's, again, where the research is behind, where ... Probably, it would be effective, but we don't know for sure yet.

Dave Asprey: And if we're talking about breathing hard, you could just do Pranayama or breathing meditations or just sit there and breathe really hard, right? (laughs)

Brant Cortright: Well, the idea is to also get your heart rate up as well ...

Dave Asprey: Okay.

Brant Cortright: ... because the oxygen has to really get there. And they think that, that both are involved.

Dave Asprey: Okay.

Brant Cortright: It's total aerobic, meaning, oxygen, but ... and air, but it also involves your heart rate getting up as well.

Dave Asprey: Some, some of the more transformational technologies or, or meditation technologies that I'm, I'm aware of are things that are breathing related like Holotropic Breathing, uh, which was invented actually as a replacement for LSD, at least ...

Brant Cortright: Yeah.

Dave Asprey: ... invented in the modern sense. It's an old ...

Brant Cortright: Yes.

Dave Asprey: ... yoga breathing technique. It's one that makes you hallucinate for personal development in a, in a controlled setting. Uh, and I've done with the inventor, Stan Grof. But this is a hyperoxygenation protocol where you sit there and your heart rate does go up and you're basically panting. And is it possible that some of the breathing exercises, uh, there's this whole school of yogic and meditation and all these things with, with breathing, that those may have an effect independent of whether you're walking or pedaling or something?

Brant Cortright: That would be interesting to see. We don't yet know.

Dave Asprey: You don't have the research yet?

Brant Cortright: Um, most of the yogic breathing, most Pranayama tends to slow the system down ...

Dave Asprey: Mm-hmmm (affirmative).

Brant Cortright: ... rather than stimulate it. So, unless it's really like the kind of hyperventilating that Grof does, I would tend to think that that kind of slow breathing wouldn't, although it would have an anti-stress effect, which would help, it wouldn't have the robust effect that comes from running.

Dave Asprey: So, for, for about 5 years, I would every day do the Art of Living set of breathing exercise. Art of Living is a, a group out of India. There's, uh, 20 or 30 million people, including a Nobel Laureate, one of the guys who made the [Black-Scholes Model 00:47:36]. I want to ... I, I'm thinking that it was Mr. Black, but I can't remember which one. I actually met him at an, at an event for this. But this was an interesting set of breathing exercise because they you do a very rapid breathing, uh, at 1 part of the body, then very ... just kind of medium and then very slow, and you'd cycle up and down.

And I, I used to do this with a group of, of really successful entrepreneurs, and it was, it was fascinating because there was something good happening. Like you felt great for ...

Brant Cortright: Mm-hmmm (affirmative).

Dave Asprey: ... days after you did the longer series, and, if you just spent 10 minutes a day, it was kind of like a reset, so I think there was a parasympathetic effect. But, now, you have me wondering if the breathing also was driving my ability to, to either maintain or lay down new brain cells because it caused me shifts that were pretty profound. And I don't do it on a daily basis now, but I've kind of incorporated breathing into like my awareness. [If it's me], [it] just kind of always do.

Brant Cortright: Mm-hmmm (affirmative). Yeah, that's interesting.

Dave Asprey: Yeah.

Brant Cortright: Yeah. I don't know. I used to do a lot of yoga myself. And at this point, I just run. Um ...

Dave Asprey: Okay.

Brant Cortright: ... [in terms of the brain].

Dave Asprey: Uh, how would you measure it? Like, like, so we have lots of people listening, including people from Quantified Self, who would say, "Okay, how do I know if I got new, new, uh, BDNF or if I got new neurogenesis?" Is there a way I could

test whether a set of breathing exercises do this? Can I test it at home? Do ...
What labs do I run?

Brant Cortright: Yeah. Um, there isn't any test at this point. The neuroimaging isn't yet good enough to detect it. So a lot of what we've learned, we've learned from animals because you can only really detect it on autopsy, and so it's hard to run a lot of these human experiments and ... uh, for obvious reasons. Um, so that's why they didn't discover that actually, uh, it happens, neurogenesis happens in human beings, um, until just a few years ago because only then were they able to get dying cancer patients to take this particular [stain] which they could then look at their brains on autopsy with. Yeah.

Dave Asprey: Well, that's an expensive self-modification, so, uh ...

Brant Cortright: (laughs)

Dave Asprey: ... no self-sacrificing there. But, uh, I have noticed that there are short-term changes in cognitive function. We used, uh, [inaudible] studies [inaudible] [finger tap] time to measure, uh, Bulletproof coffee made with the mold-free coffee beans versus non-tested coffee beans that, uh, especially in the US, are universally, uh, contaminated with some level or another. It's an unpredictable level. And what, what I found was a statistically significant difference where like, okay, people have these subtle changes in their day to day cognitive function.

And there was another technology called Visual Contrast Sensitivity where you can look at your eyes' ability to discern very small changes in the color of gray. If you're a little bit neurotoxic, then you don't see changes in gray that a normal brain will see.

So I'm, I'm guessing that ... and I'm saying this to see if you've heard of any of this, but also for the people listening, there's a lot of physicians and doctors and researchers who listen to Bulletproof Radio, like someone out there probably already has the technology that can tell us whether what we're doing is causing these short term behavior changes that are indicative of an increase in neurogenesis. Uh, I don't know for sure, but somebody has to know. Like send me an email or send us both an email. (laughs)

Brant Cortright: Yeah, that's right. There are lots of tests that indicate that probably neurogenesis is happening, but we don't know definitively until autopsy. But, you're right, there are different cognitive tests. There are different emotional tests. Um, there are different body spatial awareness tests that ... and there are even certain sorts of brain imaging, um, functional MRI, which will show cortical thickening.

Dave Asprey: Yeah.

Brant Cortright: But it won't definitively show neurogenesis. It may be just that synaptogenesis is happening and the increase in connection is happening, so, but, probably, but we just don't know definitively unless we do an autopsy.

Dave Asprey: That's a fair point. And I realized, when we talked about neurogenesis, I, I meant to ask you to explain the difference between synaptogenesis and, um, myelogenesis. Can you walk through the different types of plasticity in the brain? I think everyone listening would appreciate just understanding the ways the brain can change.

Brant Cortright: Sure. So synaptogenesis is the brain making connections among the different brain cells. And we've known about this for a few decades now. It's kind of old news. It's how the brain is constantly rewiring itself. And myelogenesis is, you know, creating new myelination. And, actually, the myelination doesn't even become fully present until our 50's or even early 60's. There are some parts of the brain that don't achieve full myelination until very late in life.

And so this idea of the brain being on this downhill course from our 20's on is not really true. There are some things in terms of fluid intelligence, in terms of rapid learning that decrease slowly starting in our 20's and 30's, but there are many other things involving crystallized intelligence, involving empathy, involving planning, emotional regulation, executive function, which don't even reach their peak until our 40's, 50's, some even early 60's. So there's myelogenesis. There's, um, synaptogenesis and then there's neurogenesis, which is the creation of new brain cells, new neurons. And that's the big game changing discovery here.

Dave Asprey: So I'm, I'm blown away when, when I read the research these days. You were just saying that the brain is probably, maybe, maybe other than the liver, the most self-repairing, uh, self-optimizing, changing organ in the body. It's, it's capacity for change is amazing, but it's also unaware of, of damage. Like the liver will rebuild itself when it's damaged. The brain doesn't appear to know.

We have all this research. Daniel Amen was just involved with this movie, and I want to call it Concussions, I think it was the name, but he's done all these SPECT brain scan images ...

Brant Cortright: Mm-hmmm (affirmative).

Dave Asprey: ... looking at the effect of these things. All the neurofeedback work that, that I have done is basically showing the brain where it's screwing up because it doesn't know. So the brain doesn't have awareness, but when it does get awareness or gets the raw materials the way you're describing, it'll change rapidly, but it doesn't change in response to injury or change in response to environmental stimulus is I think what we're, what we're determining.

Brant Cortright: Mm-hmmm (affirmative).

Dave Asprey: Do you do work or have you looked at the applications of the research on injured brains?

Brant Cortright: Um, not so much ...

Dave Asprey: Okay.

Brant Cortright: ... on injured brains. Um, I work more with people are experiencing some kind of cognitive decline or like they've lost their edge. I've worked with a lot of people in the tech industry who are in their 40's and feeling like, you know, they just don't quite have the same edge that they did, and there are people in their 20/s and 30's who are kind of nipping at their heels, and they're getting stressed. So I work with that population and also sort of Baby Boomers who are aging, who are worried about cognitive decline. You know, Alzheimer's is a huge problem right now.

Dave Asprey: Yeah.

Brant Cortright: One in 3 seniors dies with either Alzheimer's or some other form of dementia.

Dave Asprey: Yeah.

Brant Cortright: And if present rates continue, 50% of people who reach the age 85 will have Alzheimer's, and so it's horrible. It's expected ... Most of us are expected to live to be 85, that's pretty scary.

Dave Asprey: Uh, I'm, I'm working really hard in getting the Bulletproof diet out into the retirement homes and the retirement areas because one of my personal, uh, missions is, is to help to reduce the incidence of Alzheimer's. And my 94-year-old grandmother, uh, was just there for my birthday a little while ago. And, uh, she uses these kinds of principles. And when she is good about her fats, like she watches calculus videos on YouTube and, when she isn't paying attention to her diet, which does happen, then it's like she forgets to pay attention to her diet because the difference between, in an older brain like that, a proper nutritional profile with the right fats versus, you know, the wrong fats or no fats and all the other stuff, it, it's just night and day. It seems to be even more amplified as you get older.

Brant Cortright: Yeah, that, that's right. And, and, right now, Alzheimer's is the one disease according to the Alzheimer's Association for which there is currently no treatment, no cure, no prevention, no drug to do anything.

Dave Asprey: Wow.

Brant Cortright: The pharmaceutical industry has spent billions of dollars and hundreds and hundreds of clinical trials to come up with a drug that would help this. And, so far, it's been a complete failure, an abject total failure, zilch, nothing. Until now-

Dave Asprey: I think it's because food works better than drugs, right? (laughs) And you said, "until now." Do you have a drug? Or ... You said, "Until now." That's sounds pretty exciting.

Brant Cortright: Until now, so, most of the research is driven by drug companies ...

Dave Asprey: Yeah.

Brant Cortright: ... or by academic researchers looking to discover the next big patentable billion-dollar drug. Very little research gets done from a holistic perspective ...

Dave Asprey: Mm-hmmm (affirmative).

Brant Cortright: ... because there's not much money to be made. Most of the things are free ...

Dave Asprey: Yeah.

Brant Cortright: ... or readily available. But, late last year, the Buck Foundation on Aging here in California came up with a study that showed that using ... they're really kind of a simplified version of what's in the book, like, again, the body, heart, mind, spirit approach, they were able to reverse the cognitive decline associate with Alzheimer's in seniors many of whom had to stop working ...

Dave Asprey: Yeah.

Brant Cortright: ... because their memory was so bad. What they found is that they actually could redeem their memory and they went back to work for the 2 years that they followed them up in the study. And then a few months ago, in the British Medical Journal, Lancet, there was a Finnish study, the, the first randomized-controlled study of 1,200 at-risk seniors for cognitive decline that again showed, using a kind of simplified version of the holistic approach in the book, they were able to delay cognitive decline in an at-risk group of seniors.

So, right now, it looks like a holistic approach is really the only thing that can help to prevent or delay Alzheimer's because it seems like it's a lifestyle disease more than anything else. And since it begins decades before we see the symptoms, now is the time to start for all of us.

Dave Asprey: Uh, prevention is a lot easier than waiting till what happens and then reversing it. Uh, I supposed I was fortunate to have become old when I was young, you know, arthritis at 14 and cognitive decline in my mid-20's and obesity and insulin resistance and all that, so I did kind of get an early warning call. Otherwise, I probably wouldn't have, uh, have learned all the things I've learned. But it, it sucks to be old when you're young. And it must suck to be old when you're old. And I'm looking to not experiencing that. I'm, i'm expecting to be young when I'm old. So, eventually, I will get old, but that should be around a 170.

Brant Cortright: [inaudible].

Dave Asprey: (laughs) What about [inaudible]? What about aging and longevity with the kinds of, of brain protector principles there? Do you have any data or any experience, like are we going to live longer if we did these things?

Brant Cortright: Um, we're already living longer, but if our brain is going, what's the point?

Dave Asprey: (laughs)

Brant Cortright: (laughs)

Dave Asprey: You don't want to be a bag of meat with no brain. Okay, that's a fair point.

Brant Cortright: So, if your brain is working well, then probably every other system is working pretty well, right?

Dave Asprey: Mm-hmmm (affirmative).

Brant Cortright: Your cardiovascular system is working well, your blood glucose metabolism is going to be good. So I think of this as sort of like the canary in the coal mine. The, the brain is, um, if we can keep that young and alive, then the rest of the body will come along.

Dave Asprey: That is, uh. is very well-said. And if your brain isn't there, who really care if your body is there, right?

Brant Cortright: Yeah.

Dave Asprey: Well, we're coming up on the end of the interview. And I, uh, I appreciate that you shared all this, all this information. And there was a question that I've asked every guest on the show, and, and one that I'm really curious to hear from you about. It's, given all the stuff you've learned, not just in your book, in your professional work, but just in your life, if someone came to you tomorrow and said, "Look, I want to, I want to be better at everything. I want to kick more ass. I want to perform better at whatever it is I'm going to do. What are the 3 most important things that I need to know?" what would you say?

Brant Cortright: It's a really interesting question. Um, I think that the first would be to find your center. Find your deep center. I come from a spiritual orientation here, and so I think of that as really a spiritual center. And so it involves I think some kind of spiritual practice for most people. Um, as we tune in and find our center, we also come across a lot of psychological issues, wounds, defenses, and so for most people it's going to be a psycho-spiritual practice to really find their center.

And, number 2 I think would be, when you find that source of inner guidance, to really discover what is your mission, like why are you here on earth? Why did you incarnate here? You have certain skills. We're here to create something, to learn something, to produce something, to contribute something. What is my mission? Once I have that, once I have my mission and I've got my center, everything else lines up I think. And then the third thing would be to have a neuro-healthy lifestyle, to have a lifestyle that promotes brain health and a high level of neurogenesis. With that, I would think everything else would flow.

Dave Asprey:

Awesome. Well, thank you for, for sharing that, and I, I just can't or I, I don't know how to stress more for people listening how important the idea of taking care of your nervous system and your brain is because, when that goes, I'm speaking from a personal experience, everything else is hard. No one likes to struggle, so, if you can keep the brain healthy, and I appreciate that you've put together a holistic view on this, if you can keep the brain healthy, you will make everything you do easier even if it's just dealing with your mother-in-law at Christmas or whatever it is. Like everything is easier, including exercise, including studying, including work, including relationships. If the brain isn't healthy, everything is a struggle, that sucks, so I appreciate that you've pulled all this work together.

Where can people find you? What's the best URL? The title of your book is like a whole paragraph, so you have to read that for me.

Brant Cortright:

Okay, the book is The Neurogenesis Diet and Lifestyle, subtitled Upgrade Your Brain, Upgrade Your Life. You can go, if you want to read the first chapter, it's at the book's website, which is Neurogenesisdiet.com. You can order it from Amazon. You can order it from any bookstore or my website, which is Brantcortright.com.

Dave Asprey:

That's B-R-A-N-T-C-O-R-T-R-I-G-H-T. We will put this in the show notes. Everything that people heard today will be transcribed. If you'd like to come and check out the interactive transcript that we put up on the website, this is a big project, by the way, anyone listening can come in here. You can search for keywords in this entire conversation. You can find the segment and, if you click on the segment, it will take you to the YouTube channel for Bulletproof to specifically that part of our conversation. You can click the word and then hear the video associated with that word, which makes it really easy for you to get it. Whether you're a visual reader or you're like more the auditory visual thing for video, we'll get it to you both ways, and then you can share it both ways with your friends because I think there's some brilliant, important knowledge in this episode.

Brant, thank you for being on Bulletproof Radio. Any final words?

Brant Cortright:

No. Thank you for having me and thank you for spreading the word about neurogenesis.

Dave Asprey: Have an awesome day.

Brant Cortright: You, too.

Dave Asprey: If you like today's episode, do me a favor. Go out there and check out Brant's work. Maybe take some extra omega-3 and not the vegetarian sort of stuff because, as you just heard and as you probably read in some of the other posts on Bulletproof, the vegetarian omega-3 just doesn't work, unless it's algae based. That works, but eating flaxseed oil, no matter how much you eat, you're not going to get enough of the good stuff from that.

Have an awesome, and keep taking care of your brain and, while you're at it, check out Upgraded Aging, which is a formula that helps your brain because it helps your mitochondria, those little power plants that are richest in the brain. Have an awesome day.