Introduction and Guest Background

Welcome back to the Reverse Alzheimer's Summit. I'm just absolutely thrilled to have Brant Court right back today. I had a really phenomenal interview with him on the Collective Insights podcast, and I invited him back because of just the quality of his presence and the quality of the information that he has to deliver.

I'm so excited for you to get the benefit of his updated information here today. Grant Courtright is a PhD and the author of the Amazon bestseller Holistic Healing for anxiety, Depression, and Cognitive Decline.

He is professor emeritus with the California Institute of Integral Studies. And Doctor Courtright is a licensed clinical psychologist with a private practice in San Francisco, as well as online.

He also has an online coaching and consulting practice focused on brain health, anxiety, and depression. He is the author of three previous books The Neurogenesis, Diet, and Lifestyle.

That's the one I've got right here that I was just telling him how much I appreciate. Also, an Amazon international bestseller and psychotherapy and the spiritual, excuse me, psychotherapy and spirit and integral psychology.

Yoga, growth and opening the heart. So, doctor, thank you so much for taking the time to join me again. It's really a pleasure and a privilege to have you here.

I'm happy to be here, Heather. So let's dive in to what is what? Why is Alzheimer's? Why are the rates, the incidence of Alzheimer's skyrocketing over the past 50 years?

Good, good. So they're at least five times what they were in the 1960s, right? So it can't be genetic. It must be something in the environment. If it's genetic, it's going to take 10,050 thousand years.

So it's something in the environment. And my own sense is it's a lot of things. The environment, a lot of things in the physical environment particularly, but also in our emotional environment, our mental environment, our spiritual environment.

So my approach is really holistic body, heart, mind, spirit that we exist on these different levels and they all come together in the brain, right? We experience them all through the brain as a coherent, integrated self.

So the two major parts that I want to focus on are that we are this psychophysical being. So our psycho, really psycho spiritual being can't be reduced to our physical brain and our physical brain can't explain our psyche.

They form one whole, but we have these different levels of who we are. So on the physical level, there are more neurotoxins in the environment than there have ever been.

Wikipedia lists something like 200 pages with 30 neurotoxins on each page, each with its own Wikipedia page. Smog is a big one, right? The 2.5 micron particles are so small they enter into the lungs, into the bloodstream, cross the blood brain barrier where they act like little wrecking balls in the brain, creating inflammation.

And we know that inflammation is behind most major diseases, including Alzheimer's. Alzheimer's patients have elevated inflammatory markers. Food is a big one.

The standard American diet, abbreviated Sadie, is a recipe for Alzheimer's and cognitive decline. As well as anxiety and depression. Pesticides. Glyphosate being the big one, which is both an antibiotic, meaning it wipes out our microbiome, which is a disaster, but it also opens up the tight junctions of the intestines.

Why Alzheimer's Rates Are Rising

And the tight junctions are what keeps out the bad stuff. But letting the good stuff so in those open up, we get all sorts of toxins coming into the body in the gut that creates inflammation, leaky gut, and the same molecular signals that open up the intestinal tight junctions, open up the tight junctions of the blood brain barrier.

So we get toxins flooding into the brain, again creating inflammation and leaky brain. Mercury. Mercury from fish, from dental amalgams, plastics, all kinds of plastics, endocrine disruptors.

We could go on and on. It's it's never been a worse time really for the brain in terms of all the toxins that are floating around and emotionally there is a huge amount of stress.

It seems like stress is increasing for most people. Stress also has powerful effects on not only our mood, but our cognition as well. High levels of chronic stress create, first of all, inflammation.

And inflammation is, you know, hugely important in cognitive decline. The amount of fear in the world and Covid only made it worse. There is just been an epidemic of fear this past year.

People have been scared out of their minds, and partly they've been scared because their brain is kind of set to be scared, that most people's brain is kind of pretty fragile at this point, that because of all of the neurotoxins, because of this.

Media atmosphere that survives on anger and fear, that attracts eyeballs. We are living in a pretty stressful world right now. And how much of this is really that?

It's a stressful world. And how much of this is the brain thinking? It's stressful because it's it's it's primed to feel bad. Relationships. You know, most people have less than optimal relationships when our relationship world is less than optimal.

The self becomes more fragile. There's more anxiety. There's more depression. There's more a sense of isolation. Isolation has a huge impact on cognition.

People who are lonely deteriorate cognitively much faster than people who aren't lonely. And something like a third to a half of people over 50 complain of too much loneliness.

Spiritually, many people are just adrift at this point. And so if we can really work with the brain and the self on all these levels, work spiritually with certain types of meditation and spiritual practices, work mentally to have more clear logical thinking.

Work emotionally to have a more loving, peaceful, related world and physically. A diet and exercise that supports brain health rather than erodes it. I think this will go a long way towards preventing Alzheimer's and reversing cognitive decline to some degree with anybody who is experiencing it.

The brain is incredibly resilient. Sometimes it's so far gone, you know, we can't do much, but we can always do something. And if somebody is watching this summit, they have enough of their marbles that they can probably come back and be doing quite well.

You know, imagine we have a lot of caregivers here who can now understand why I invited you, because one of one of the things that I so appreciate is that you take this very comprehensive approach, and certainly in my clinical practice, as well as at Marama, what we've noticed is that the more comprehensive we can be, the more we can identify those factors that might be inhibiting optimal brain function.

The more we can identify them and then do something about it, the better our patients do, the better our residents do. And so although I don't want to overwhelm people and add more stress, I am hope that this is really empowering.

I'd love for you to get into the steps that you're so great about giving people the kind of actionable things that they can do right away. So what do we do to reverse this trend?

On a personal level, what are the things what can we do today? Okay. Okay, good. Before we go there, I wanted to see if we can zoom out a little bit and get sort of a big picture view of the brain, because that will then tell us how we can intervene in ways that are most helpful.

Please. So the brain, just like the self, is always growing, right? Like in psychotherapy. One thing psychotherapists have come to realize over the years is that people enter therapy when they're stuck, when they're no longer growing.

Right? People are depressed, anxious, relationship, whatever is going on. It's because they're stuck. They're no longer naturally growing. And what psychotherapy tries to do is to get people growth process going again.

And once that's going, once they're moving and growing again, things take care of themselves. Well, it's the same with the brain. The brain is not some static dead computer.

It's a living, growing, moving organism. And this rate of growth, our neurogenic rate, is the most important biomarker for brain health that most people have never heard of.

So some some more context here. Yeah. I want you to talk a little bit more about neurogenesis. It's then the name of one of your books is the Neurogenesis Diet and Lifestyle.

And I think this catches some people off guard is the fact that our brains can still regenerate and grow. So even into our later years, even into our senior years.

So will you just confirm that I understand that correctly? Yeah. Absolutely. Right. That's right. So it used to be thought up until about 20 years ago that the brain stopped growing new brain cells once we reached our early 20s, and it was just a slow die off after that.

Then some decades ago, 3 or 4 decades ago, there's no there's neuroplasticity, meaning the brain is making new connections among existing neurons. And then about 20 years ago, they discovered that actually the brain makes new brain cells throughout our entire lifetime, up until the time we die in the late, late, late age.

Now, at first, I didn't know what the significance of that was. But then they began to understand that when that growth rate slow. So neurogenesis is the process of making new brain cells, the generation of new neurons and synaptic genesis is neuroplasticity, the brain making new connections among its existing neurons.

So this general growth rate, neurogenesis, synaptic genesis is called our neurogenic rate.

Neurogenesis and Brain Growth

So when that slows down then we get symptoms. We get anxiety. We get depression and we get cognitive decline in brain fog. People don't learn as quickly.

The part of the brain that grows new neurons is particularly centered in the hippocampus. Now the hippocampus is a very interesting part of the brain.

So the hippocampus is this crescent moon shaped structure, and part of it is involved with cognition, and part of it is involved with emotion regulation, particularly the regulation of anxiety and depression.

So. When the brain's growth rate slows down, we start making new memories as well, and we falter in our capacity to deal with anxiety and depression. So the hippocampus doesn't store new memories.

It processes new memories. It allows us to make new memories. So in Alzheimer's. Alzheimer's massively attacks

the hippocampus. And when that happens, the person stops being able to make new memories very well and they lose their memory.

And people who have Alzheimer's, it's like when memory goes, it's like it pulls the rug out from the self, like the person just isn't fully there. They have a kind of blankness to them.

Memory is the linchpin of the self. So it helps us learn new things. It helps us remember who we are. And it also helps in emotion regulation. So what happens with anxiety and depression is that there is a slowing of the neurogenic rate.

And what happens in cognitive decline is there's a slowing of the neurogenic rate, sometimes one half or the other of the hippocampus involved. Most often it's both together.

What antidepressants do is by increasing serotonin levels. Say for example, with instance our eyes, they don't magically take care of some serotonin deficiency.

There is no serotonin deficiency in depression. But what happens is that increase serotonin levels, increase neurogenesis, increase the neurogenic rate.

And with SSRI things like Prozac, they increase neurogenesis on the emotion regulation side, not on the cognitive side. That's why you don't get a cognitive boost with SSRI is they only increase it on the side.

So what we want to do is most people because of inflammation which slows down neurogenesis. And synaptic genesis because of high blood sugar, which slows down because of these toxins, which slow it down.

What we want to do is we want to increase the neurogenic rate. We want to get the brain moving again. Right? We want it stop being it's having it be sluggish and slow down, which is the lead in to cognitive decline.

All timer's and these other mental health disorders. So these common neural mechanisms underlie all of these things. So what do we do to get the brain moving again to get it, up to its highest neurogenic rate possible.

So it turns out most people can increase their neurogenic rate by five times, if not more. And when that happens, we get radiant brain health, right? The person is able to think lucidly, clearly, learn new things rapidly, figure out things better, this better problem solving, and they feel good.

There's a sense in which it's just great to be alive. There's there's a way that there's a kind of resilience inside where when bad things happen, as inevitably do we bounce back.

We have the resources to deal with it. We're not as knocked over by small wins, and when we are knocked over, we can come back. So in radiant brain health, there's this feeling of just you can hardly wait to get out of bed and meet the day.

It's like being a I have a four year old who just wants to get out there and meet the world. So that's what we want. A healthy four year old has a high neurogenic rate.

That's what we want. We want to increase that neurogenic rate like in childhood. So what I have in the book is the healthy brain diet. And there are four pillars to the healthy brain diet neurogenic, ketogenic, anti-inflammatory, and gut friendly.

All four of these things are critical for brain health. So first, neurogenesis. It turns out there are a number of compounds that jumpstart our rate of neurogenesis and synaptic genesis for example, blueberries or blueberry extract, green tea or green tea extract.

The eggs and green tea act like, fertilizer for the brain. What they do is they increase Bdnf, this brain derived neurotrophic factor, which is like miracle gro for the brain.

That's what gets us moving. You know, there is no right now. There's no biomarker for depression or anxiety. However, some people are thinking that Bdnf levels may be their biomarker, that based on your level of BNF, you can tell pretty much as a person, depressed or not.

You can also tell how much their brain is in this growth mode, this this where it's moving, moving forward. So a number of things like App Engine, a number of like bio flavonoids, AP Jenin, luteal and quercetin.

Another big one is his spirit. In his spirit in in the form of methyl charcoal keeps new brain cells alive. So we get almost a 100% survival rate, which is also an important dimension to this.

We want to keep the new brain cells that are there online and working. Probably the most important and single most important thing would be omega threes, omega three fatty acids, fish oil, omega threes are made up of ala which isn't terribly important.

EPA, which is a strong anti-inflammatory and DHEA, which also has anti-inflammatory properties. But it's also the fundamental building block of the brain, right?

Two thirds of our brain is made up of fat, and a third to half of that is DHEA. So we want an ongoing supply of good nutrients in the brain, right. The brain is always under construction.

And so we need good construction materials to keep it growing, to keep it moving, to keep it building. And DHEA is the fundamental brain structure, brain food that we need.

Most people need 3 to 4g a day. If you have high levels of inflammation, you should probably do a ratio of 2 to 1, EPA to DHEA. If you have good low levels of inflammation, then a 1 to 1 ratio of DHEA to EPA is good.

And it's important to do molecularly distilled fish oil because fish tend to concentrate mercury. And so in many types of omega three products, we get high levels of mercury, which is not good.

Mercury is the second most potent neurotoxin. Second only to plutonium. So we don't want that. We want molecularly distilled. And we want to make sure it's in the dark capsule so it doesn't oxidize.

We don't want rancid fat coming into the brain. Let me just share one experiment that they did with monkeys, because I think it's it's telling. They raised one group of monkeys on a low omega three diet and one on a high omega three diet, and the monkeys on the low omega three diet had very simple, undifferentiated brains at the end of the experiment.

And the monkeys on the high omega three diet had very complex, richly differentiated brains, almost like humans. High levels of DHEA and omega three increase your neurogenic rate by 40%, and gives you the most important food you need for your brain.

Okay. So the book goes into about 30 different or 40 different, supplements, nutrients that increase, our neurogenic rate. Along with that is eating in such a way that we don't eat foods that decrease our neurogenic rate.

So what decreases in sugar? High carbohydrates that will cut your neurogenic rate into high sugar? Diet will cut your neurogenic rate in half. That is really bad news when you consider the average American diet and all of the sugar that is consumed.

It's no wonder there is a brain health crisis right now. We also don't want bad fats, unhealthy fats, so we don't want seed oils. We don't want vegetable oils.

These oxidize. We don't want high levels of omega sixes. We need some omega six, but we want an omega three to omega six ratio of about 1 to 1, or maybe 1 to 2.

Which grass fed meat has perfectly. But which commercial meat does not have? Most commercial meat is a 1 to 5

ratio, so it's highly inflammatory. Say something real quick.

One of the things that you hear commonly from neurologists, primary care providers, from people, and even in the Alzheimer's world is that we should be potentially consuming a low fat diet.

And this comes out, I think, the China study, Andrew Campbell has work. It can you speak to like why why? That's incorrect. Yeah. Yeah. So this was this has been the paradigm for the past 50 years.

Healthy Brain Diet: Neurogenic and Ketogenic Principles

In the 1950s, people at a much higher levels of fat, lower levels of carbohydrate, and these rates of anxiety, depression and cognitive decline and Alzheimer's were much, much lower back then.

There was some bad science done, in the 1960s that then got carried through and was made sort of standard dietary knowledge for decades that we need to have high carbohydrate and low fat, and then that will help us with heart disease and everything else.

Well, it turns out that the more recent research in nutrition is now saying that has been a terrible mistake and that that is responsible for the obesity epidemic that we are experiencing right now, and that is behind much of the problems we see.

That's a driver of heart disease, of cancer, of autoimmune diseases, of diabetes. And certainly if I was high risk. So what we need what happens with a high carbohydrate diet is that we it produces insulin resistance.

High levels of insulin are bad for the body and bad for the brain. They degrade every organ in the body. And the higher your rate, the higher your insulin resistance, the faster your rate of cognitive decline.

Even if you are not in the pre-diabetic range, even if you're in the so-called normal or healthy range, anything over 5.0 in your hemoglobin A1, c each 10th of a point raise, and that results in a steeper line of cognitive decline.

So a good test for everybody to do is the hemoglobin 81C. To find out how insulin resistant you are. 80% of Americans are have insulin resistance. To some degree that means faster cognitive decline.

And you know, cognitive decline and Alzheimer's. It takes 20 years, 30 years to develop. So you can't start too soon on this. The other thing is that the standard American diet included a lot of bad fats, meaning fats that are easily oxidized, which when they're oxidized, it creates inflammation in the body, in the blood vessels, in the brain.

And so we want to we want to as long as we're eating good healthy fats. So maybe 20, 30% of saturated fat, animal fats are good. We need a certain amount of that.

And we need a certain amount of mono unsaturated fats. So avocados, olive oil, Depends on sort of nuts. You do. Macadamia nuts are great. Eggs. Meat again?

If it's pastured meat. Pastured eggs. With these commercial eggs and commercial meat, we get not only high inflammatory markers, high levels of inflammation, but we also get high levels of glyphosate.

Because commercial meat is fed GMO corn and soy, which has huge amounts of glyphosate in it. Also, you're getting antibiotics, so you're wiping out your microbiome.

You're creating leaky gut, leaky brain. You're creating inflammation. So the more recent research, the past decade particularly, I think, has really overthrown this low fat, high carb diet and replaced it with a much higher fat, lower carb, moderate protein approach that looks at the type of fats we're doing that's really critical.

And the sources of this fats that most studies that talk about where you shouldn't eat meat or you don't eat a little bit of meat. They're talking about commercial meat.

They're not really talking about grass fed or pastured. So that's a big confounding variable in this research where it just it doesn't tell us what we really need.

Right. And then you so you talk about the neurogenic diet and then also the ketogenic diet. One of the things we ran into with the ketogenic diet is, that elderly folks, they start to lose weight.

Do you think that that is a problem if they're losing some weight? Or do you think that maybe that's beneficial? Maybe a neutral. What are your thoughts?

Well, probably depends on their weight to begin with. A lot of older people are overweight, in which case it's a great thing to lose some weight. Yeah.

Most people on a ketogenic diet do lose some weight. Some of that is just water. And generally they hit a plateau somewhere along the line. And it again, depends on how much fat they're eating and how much they're eating.

But, yeah, most people tend to lose some weight, but then it tends to stabilize in my experience. I don't think that, unless they are too thin, that it would necessarily be so much of a problem.

Yeah. Yeah. Just consuming enough calories. Right? It's cutting out the carbs. People are concerned about weight loss, but we I'm sure you encourage the same, but we'll just consume more.

More avocados, more coconut oil, more of everything else. But is on that good list for your brain. So exactly. Eat your neck diet look like from your perspective, and how do you guide people towards that and why?

Well, so we have two sources of fuel glucose or sugar and ketone bodies, or that we can burn either sugar or fat. Most people are pure sugar burners. They only use that for fuel for the brain and for the body.

That produces over time, insulin resistance, as we talked about. But also it turns out that glucose, aside from producing insulin resistance, it's also a dirty fuel, produces oxidation, a lot of toxic byproducts.

So ketone bodies or fat is another form of fuel, and it's actually a more efficient form of fuel because it's a very clean fuel. It burns cleanly. It also produces more efficient energy.

So in the heart mitochondria, they operate 26% more efficiently. And since the heart mitochondria and neural mitochondria are very similar, they believe that that is the same with the brain.

So if you can imagine your brain operating at 26% greater efficiency when a person is in what's called nutritional ketosis, meaning their blood levels are 0.5 or above, it feels like you are operating on all like your brain is firing on all cylinders, like you are operating on a higher level.

There's a clarity, there's a smoothness, there's a stability that just doesn't happen if you are just a sugar burner. Now, most people and I found this myself, found it a difficult switch because carbs taste so good.

Everybody is so addicted to them and they just creep into the diet. So it's hard to know if you're in ketosis or not unless you actually do a test either.

A breath, having one of these breath meters or a blood test I guess is the gold standard. So but once you do make that switch after about oh 6 or 8 weeks, your metabolism really is able to become more flexible.

It shifts into a ketogenic mode. And at that point you just feel really good. I was talking to a friend of mine about this for years, and just a couple of weeks ago, he finally got into ketosis and he said, wow, this feels fantastic.

I had no idea. You know, it's hard to convey to somebody how good it feels to be in ketosis until they actually experience it. And it's hard to get many people to try it.

And so if they can at least reduce carbs and increase the good fats, it's in some ways like turning an oil tanker. It takes time for most people. If you're in a controlled environment where you can really dictate the food that people eat, you can do it immediately.

It's great, but for most people, it's going to be a somewhat gradual shift where over time they will then go, okay, I'm going to just do this, and then they will see how good it really feels at that point.

We've certainly seen that, clinically that people often what will happen is a caregiver will do it with their loved one who's struggling with cognitive decline.

And then the caregiver decides, oh, I'm going to stay on this because this this does my mood is better. My gut is better. Everything starts to get better.

I'm thinking more clearly. I think that's the most common thing. And then of course, the weight loss. Most people welcome that. The key to the diet, what exactly does it do?

Anything in particular to the hippocampus because it also increases neurogenesis. It's neurogenic a ketogenic diet is neurogenic. Also, ketone bodies stimulate neurogenesis and synaptic genesis.

I think that's partly why they increase mood and increase cognition. But apart from that, they also are just a more efficient fuel. Also, ketone bodies reduce inflammation.

One of the major researchers in this area, two guys have a have a couple of books out called the Art and Science of Low Carbohydrate Living. And they looked at 17 inflammatory markers on a ketogenic diet.

And they all went down on a ketogenic diet, almost 17. So it's a very anti-inflammatory diet as well, which is great. And it's also a detox diet because you're turning over more fats.

You do tend to start letting go of more fat soluble toxins in that process. And, yeah. Yes, yes. What is your perspective on exogenous ketones? So do you ever suggest that people use ketone powders or even MCT oil as like a supplement?

Yeah, I think that's can be a good way to kind of get people getting sort of sneak previews of where they're going before they're fully there. And I think some people also just, it helps them even when they are on a ketogenic diet.

It helps. Just like instead of coffee, some people will just have ketone extra. His agent is ketones and it turns out that there's a lot of cognitive benefits that happen just with exogenous, ketones, probably most of the, cellular and metabolic benefits come from having it happen naturally.

But many of them, not all of them, but many of them do come simply with exhaustion. As ketones as well. So I think it can be a kind of way of getting people into it.

It also can be a way I, I've seen it almost be abused, almost like a drug, like people just sort of amp up almost too much on it, like too much coffee.

And you can also do that. It can be like rocket fuel thing. So there's a you can overdo it as well. I've seen that a little bit. What are the struggles I've seen people run into is they go towards intermittent fasting or they start adding fats, but they're not reducing their carbs.

That, you know, is there a benefit that we can get from increase in fat, and intermittent fasting? I don't actually we should chat about that. How do you feel about intermittent fasting and and you part of it, but not all of it and still get benefits.

Yeah. Yeah, certainly. Intermittent fasting will create some ketones depending on, you know, how much of a space there is. And the idea is that we do want to be metabolically flexible, right?

We want to be able to both operate with glucose and with ketone bodies. We want to be able to do both. So many people I think, benefit from a cyclical ketogenic diet where once a week or twice a week they will have a carb refilled day.

When I do that, I kind of feel like a veil, like I'm a little bit logy. I'm not quite as with it. And so I kind of like it in terms of my taste buds, but cognitively, I'm not crazy about it.

Because it I'm just not operating quite the same way. So yeah, we if a person can get this, I mean, again, whether they reduce carbs, whether they increase fat, however they get there, I think moving in that direction is going to be good.

But it's not until they really reduce the carbs that they're going to really get their benefits. So you don't recommend that people stay on a ketogenic diet forever.

What happens next? So once someone's in a do keto adapt it after 6 or 8 weeks in keto. Yeah. Just so my own sense is that it's helpful for people for a good couple of years anyway, that there's a brain healing that happens.

That is great. And then for some people, it's great to stay there, but that not everybody needs to, if you are young and you don't have insulin resistance, it might be fine for a while to bring carbs back into your diet.

And, I think you want to be as low carb as possible, but if you can do carbs, you know more power to you. Sooner or later you're going to get you're going to be reducing carbs.

I think, for most everybody. So my own sense is that not everybody needs to do that again, depending on the person's age and their metabolic flexibility.

I am, you know, 90% ketogenic. But I do cycle out occasionally just because I think that that is helpful and that it's your body adapts to anything. And so if you stay purely ketogenic, there can be a kind of paradoxical increase in insulin resistance over years for some people.

I found that happening, and I know a number of people adapt to that. The cyclical ketogenic diet then stopped my hemoglobin. Even C dropped lower when I did the cyclical after a while.

So everybody's metabolism is different. I think it's just a matter of experimenting to see, so have we gone through the pillars of the healthy brain diet?

We've gone through two of them. Two of them. Okay, unique and ketogenic. So the third one is anti-inflammatory. So there are a number of good nutrients to do that have a natural anti-inflammatory effect on the body.

A good blood test for everybody to do is called the high sensitivity C-reactive protein. It's a general inflammatory marker. Most people have elevated inflammatory levels.

So if your level is 0.5 and or above for a male or 1.0 and above for a female, it would be good to bring that down. And most people are above that. So, first of all, this involves not eating foods that are inflammatory, such as deep fried foods.

French fries, really bad. Fish and chips. Much as I used to love them. Really bad for the brain. Anything deep fried that high amount of it makes, it oxidizes the fats and it creates inflammation.

A high carbohydrate diet is an inflammatory diet. Another reason to go on a low carb diet.

Anti-Inflammatory and Gut-Friendly Strategies

And certain things such as, again, green tea is anti-inflammatory omega threes. But things like borage oil, let's see. Black cumin seed oil. They also have seed oil.

Now it's flax seed oil. An exception to that. Flax seed oil, you know, that is mostly Allah, isn't it? And Allah in the form of flax oil does not increase EPA or DHEA.

People say if you're vegetarian, do flax oil. But it turns out that their body just doesn't convert it to the two types of omega three that we really need.

So I think it's virtually useless. If a person is a vegetarian, they should do an algae form of omega three. So, black cumin seed oil, highly anti-inflammatory.

Tart cherry extract, highly anti-inflammatory. The book goes into, a couple dozen anti-inflammatory things. We can take that, lower our inflammatory levels.

Naturally. We don't want to take things like ibuprofen or something like that. That's of course not going to be good for many systems of the body. But we want to eat a, an anti-inflammatory.

And for many people, some supplements are also helpful in that. And then the fourth pillar is, gut friendly. So we want to do is we want to repair the tight junctions of the gut.

And we want to increase microbial diversity. So first of all, repairing the tight junctions so the person doesn't have leaky gut anymore. There is something called iron gut health put out by Zach Bush which is really helpful in this.

There are a number of probiotics. There are a number of strains that help heal the tight junctions. So those sorts of things are good to do. The book goes into a number of strategies in that regard.

The other thing we want to do is increase microbial diversity. So people talk about taking probiotics. And some strains are probably good to do because there are certain strains that when people take them, they've been shown to reduce anxiety and depression scores by 50%.

There are other probiotic strains which have been shown to increase cognition scores. So, you know, our microbiome has as many. We have as many cells that are bacteria in our bodies as we do cells.

About 40 trillion. It used to be thought it was way more. But it's it turns out it's about 40 trillion. So of that in indigenous cultures they've got about 20,000 strains of bacteria.

In the West, most people have 10,000 strains, or as few as 500 or 1000, which is terrible when it comes to immunity, because 80% of our immune system is our microbiome.

And the more diverse an ecosystem it is, the more diverse any ecosystem is, the more resilient it is, the less diverse, the more, vulnerable to collapse it is.

So it's the same with the human microbiome. We want to increase microbial diversity back up to 20,000. We want to increase by hundreds and hundreds of strains, thousands of strains.

So there are certain kinds of, probiotics that actually do help that, you know, the problem with taking just a few probiotics is that it's like monoculture.

You know, it's just taking one or 10 or 20, but we want hundreds, thousands. So plantarum, for example, increases microbial diversity. It invites a lot of other strains into the, intestines and to colonize their, again, what what is it called again?

Man. Tara plant. I think it's, it's, either a lactobacillus or a bifida. I think it's like the bacillus plantarum. The book, there's a few others also, that have that same effect.

There are certain types of prebiotics that also increase microbial diversity. And just eating a high fiber diet increases microbial diversity. Just that.

Also just going into nature and breathing, you get hundreds of strains into your nose, into your mouth that eventually work their way down into your gut.

If you're swimming in the ocean, swallow a couple drops of water that will increase that you get hundreds, thousands of new strains in that, If you're out digging in the garden, don't clean your hands immediately.

Let it begin to colonize your skin and it works its way in. We want. Being in nature is the single best thing in a variety of nature. So the mountains, the beach, rivers, whatever, that increases microbial diversity and avoiding antibiotics whenever we can, unless they're absolutely necessary, because that is just a disaster for the microbiome.

And that is why most developed those people living in developed countries have a really impaired microbiome. A lot of the patients they see clinically these days are quite sensitive.

And so they can't always tolerate probiotics or some of the things that we've discussed, things I've seen really profoundly shift. The microbial balance in the gut is digestive enzymes.

So when we're under a lot of stress and we're not getting enough hydrochloric acid, we're not getting enough digestive enzymes. Oftentimes there's a couple things happening.

One is our food can be putrefying and allowing the wrong gut bugs to grow because we're not quick enough. The other thing that happens is it's not quite the right environment either the pH is too high or too low.

And so the microbes that should be there aren't aren't in the place right now. I'm wondering if you run into this as well. No. I'm interested to hear you say that, I have not really done much stuff around, enzymes.

I just have enzymes. So it's interesting to hear you say that. It makes sense, but you're saying. Yeah, yeah, we've seen it on the testing. So when we do testing, testing, and then when we go back and look, oftentimes digestive enzymes are the only things that someone can tolerate.

And that's the only thing we've changed. And we retest. And we see that the microbial balance is shifted really extremely much more than I was expecting before I saw it with my own eyes.

That's very interesting, But I think also a testament to what you're describing or, being out in nature, you know, getting exercise, kind of doing all of these things, gardening, all these things that lower our stress levels as well, help us to produce those right enzymes and again, create that environment that supports the right microbiome.

Yeah, yeah, yeah. So we have now covered the for neurogenic ketogenic anti-inflammatory gut friendly. Well I'm so glad to have you here because again like the comprehensive approach that you take and you are a clinical psychologist.

So and it's with ears and go into how our, our psychological factors really influence. So we talked about the anatomy of the hippocampus and how connected depression and anxiety and dementia are.

But I want to talk a little bit about the psychology and how our psychology can influence, dementia. As I mentioned earlier, there are so many caregivers joining us for the summit.

And caregiving itself can have a big impact on psychology and what we've seen as well as lifestyle. A lot of what we've talked about today and what we see is that people who are caregivers are actually very high rates, high risk of developing dementia.

And we know I think I don't have to tell any caregiver that stress plays a big role in this. But since I have the expert here in, clinical psychology, please dive into this for me.

Okay. Good, good. So we've covered kind of the brain side, the physical brain side, although there's also exercise,

sleep, other things there. But we've covered a lot of that.

So psychologically in terms of emotionally, cognitively, spiritually, there are a number of things we can do and a number of things we see that contribute to dementia, cognitive decline, Alzheimer's.

So on the emotional level, how we feel has a big impact on not only what kind of chemicals in our body, but also what happens in our brain. So high levels of stress, as you've mentioned.

Negative emotional relationships, relationships with. There's a lot of anger where there's a lot where there's bullying or where there's fear, where there's shame.

Shame is highly inflammatory. When a person feels shame, their inflammation levels go way up. So stress is one of these funny things where we want a kind of Goldilocks zone of stress.

We don't want no stress, right? The brain wants stimulation, optimal stimulation, optimal engagement with the world, too little stimulation and neurogenesis and synaptic genesis.

Slow way down. We also get anxiety, depression and cognitive decline. All those things happen when we are under stimulated, when we are overstimulated, same thing we did.

And we get stress. So we get anxiety, depression, cognitive decline. So most people complain of too much stress, right? It's it's chronic stress that is unremitting and moderate.

Short term stress is actually good for the brain. That increases Bdnf and increases our neurogenic rate. We want a kind of optimal challenge to meet the world.

The brain wants to be stimulated in an optimal way to use its capacities, and so that when we are optimally engaged with the world, meaning it's if it's too easy, it's boring.

If it's too hard, it's frustrating. But in that middle zone is where we find the flow experience, where we are sort of meeting the world. Our capacities are coming forth to meet the challenge.

And there is this wonderful state of flow where we are acting, we are acting on the world, and there's a sense of accomplishment, there's a sense of competence in the whole thing.

Self esteem goes up when that happens. In the type of stress most people have, however, it's constant. It's too much. It's ongoing. And with ongoing stress, what happens is that the stress hormones never have a never go down, that there's no break from it.

So we need to have some kind of break from stress. We need to have some way of turning off whatever is causing the stress and resetting our nervous system.

And so that's why sleep is so important, why exercise can be important, why meditation. Spiritual practice can be important, but also relationships. You know, relationships are a source of stress for many people.

But we also need good, loving, supportive relationships to reduce stress, right? That really good emotion regulation is where I can modulate my anxiety, my depression, my stress, and I can do a lot of that internally.

But I think one thing that psychology has really discovered is that we also need other people to help us regulate emotion, to help us integrator emotion.

We need to have a friend who can put a hand on our shoulder and reassurance that we're okay, that we're loved, that we're doing okay in the world, that that they're there for us.

So when we fall down that we can't do it all alone, right? That that life is a team sport. We need other people in this.

And so the quality of those other relationships, the self is fundamentally relational.

Psychology, Stress, and Relationships

We exist in a web of relationships. And when those relationships are toxic, are stressful, are scary, are negative, are angry, or are even just kind of unresponsive.

We experience stress. We experience alienation when those relationships are loving, supportive, sweet. Then the parasympathetic nervous system kicks in.

We feel, all is okay with the world. So the quality of our relationships is hugely important. Just like the quality of our engagement with the world is important, the quality of our engagement with our job is important.

Finding this Goldilocks zone of not too much stress, that too little stress, optimal engagement, And also too little. I think we talked about this earlier.

Too little contact. Not good. People who are in solitary confinement, they go crazy here. Many people really can go psychotic in those situations. People who are just in a hospital bed or interacting very.

Or just living alone. Terrible. It it's a huge it's a loneliness is a greater risk for heart disease and dementia and smoking is unbelievable. So we need relationships, but we need good relationships.

Not just any type relationship, but you could need good nourishing relationships. And that's true for caregivers as well as, care receivers. So then in that radiant you describe radiant brain health.

So these are some key psychological factors. We've talked about some key dietary factors. Are there other things that start to encompass so that we should include and talk in terms of talking about a radiant brain like this optimized perfectly functioning brain okay.

So two other dimensions, the cognitive and the spiritual. So the cognitive side of this is it really comes down to lifelong learning. The brain thrives on learning new things.

When we stop learning, cognitive decline sets in. There's measurable cognitive decline at two points in life for many people one when people graduate from college and second is when they retire.

Unless they move into a profession where they use their brain, or when they retire, they continue to use their brain, then there is no measurable forward.

So we need to be using our brain in many different ways. It's not just a matter of doing crossword puzzles. That doesn't generalize across systems. We need to cross train the brain, so we need to do reading.

We need to do writing. We need to be, learning new things that are not necessarily even cognitive, like learning to cook or learning to garden or, it doesn't have to be.

When people talk about learning, they often associated with school. And so many people are emotionally and they're, they're they're educationally worded, right, that the current educational system makes people, feel like they're not smart or that they that they can't learn.

And so they get turned off to learning. And that's a terrible shame, because every brain has a unique kind of genius to it has it has a unique set of capacities.

And even if it doesn't fit into the conventional standardized educational system, still, there are resources now that most people can avail themselves of where we can tune into this.

And that we can really find ways of learning new things that are right for us. So when we learn new things, that

stimulates neurogenesis and synaptic genesis and increases our neurogenic rate, so even if it's just writing emails, even if it's just, you know, we need to be reading and writing, that is terribly writing a journal, very helpful emotionally as well as for cognition.

So lifelong learning that is the key for, cognitive health. What are the things we tell our, study participants at the clinic and our patients, of course.

And then over at Marama is we want to be doing things that help you to relearn executive function, because that's what's going to keep you independent as long as possible.

And that's very motivating for somebody who's maybe staring down the face of the potentially moving out of their home or having to move in with someone else, or have a caregiver in their home, or even end up in a facility.

So when, whenever we can kind of put it in that context, like, okay, we want you to learn new things for your brain, but not just for your brain, but so that you can stay independent for as long as it's possible.

So you can drive on your own so you can shop for yourself. So you can do all of these things without needing to, to depend on someone else. And what we found is that learning these new routines, these rhythms for taking care of your brain health is exactly that, right?

When you have to learn to cook a little bit differently, you've got to shop differently. So you read a different list. You look at different recipes, you prepare foods in a different way.

You may be pack foods in a different way. You go back for different leftovers. You eat maybe in a different way, chewing more thoroughly, slowing down.

Maybe there's different people you're interacting with, and those things are part of the treatment is how new that is. And then when it's challenging, we encourage people that, you know, that's a good sign.

Lean into that. That challenge means you're you're building new neuronal pathways. I really like that way of framing it that you're building executive function.

I think that's a better way of talking about it than just lifelong learning. I'm going to use that. I think that's a really nice way that people can kind of get.

Oh, yeah, this is important. Yeah. I appreciate that way of framing it. Oh, I'm so glad. Please. It's all yours. So this spiritual piece. Yeah. That's right.

So it turns out that there are a couple of different spiritual practices that have a profound effect on the hippocampus. In fact, the entire length of the hippocampus, both the emotional side and the cognitive side, where it increases neurogenesis and synaptic genesis along the entire hippocampus.

And there's very few things that do that. Most are one or the other. So two forms of spiritual practice are different forms of mindfulness practice and different forms of heart opening practices.

Lifelong Learning and Spiritual Practices

So mindfulness practices are different spiritual practices that bring us into the here and now. And these are generally classified as either concentration practices or open awareness practices.

So concentration practices are where we concentrate on one thing. For example the breath say the breath in the belly where you just tune into the sensations of breath coming in and going out, and you just passively disregard all other content of consciousness and just tune in to those sensations.

And what happens as you do that, say, for 10 minutes or 20 minutes or half an hour, is that you see all the thoughts

that you have, right? You turn into the monkey brain, monkey mind, and you see how noisy the brain is.

But then after a while, the dust begins to settle and you begin to tune in more and more acutely to those sensations. And you see there's a lot of sensations now that you were never aware of before, and the sensations become subtler and subtler, and you tune into finer and finer degrees of sensation around the breath.

As that happens, you are coming more and more into the here and now. So that's one form. The other is open awareness practices, where you're not focusing on one thing, but it's more like just the open sky, where you are simply aware of whatever arises in consciousness.

In some traditions, it's like you step back into a silent witness consciousness. In other traditions, you simply are aware of whatever arises, not holding on to anything, simply allowing it to arise and pass away and have the next thing arising pass away.

And again, over time you first of all see how noisy things are. But over time that noise begins to settle down. The one thing the mind can do that doesn't stir up more dust is pure awareness.

Just awareness itself allows the mind to settle, and as it settles, it wakes up. It comes more and more into the present moment. And so the senses come alive.

We become more and more aware of how we're feeling, what's happening in our minds. And there's a kind of equanimity which sets in is a natural, just kind of peacefulness that we begin tune into because we're tuning into our inner being, our deeper being, and where peace comes from in all of the spiritual traditions.

It's from our inner being that's the real source of peace. So as we tune into that, as the noise begins to settle, we also become more and more presence centered more and more in the here and now.

So those practices for as little as 20 to 30 minutes in the morning, in the evening, after eight weeks, produce measurable changes in the hippocampus.

Again, they used to think that it would take years to do this, but in a small amounts even it happens very rapidly in the brain. The other type of spiritual practice are hard opening practices.

So this can be like devotion or prayer. This can be different kinds of compassion practices. Sending compassion to myself, to my friends, to my family, to the larger world.

This can be tuning into the heart and focusing on a feeling of love or devotion or aspiration for the divine, and then writing that feeling deeper and deeper into the heart.

There's a number of different heart opening practices, and these also seem to have this same profound effect on the hippocampus and on synaptic genesis throughout the brain.

These spiritual practices are this really shocked neuroscientists when they discovered this, because they didn't study meditation for years and years, and nothing's happening.

But when you do meditation, you see actually there's a lot happening. It's a very dynamic state. And they were surprised to see just how dynamic it is also physiologically and how good it is for the brain.

So if we can work all of these ways physically, emotionally, mentally, spiritually, then we're going to be cross-training the brain. Then we're going to be creating this kind of radiant brain health that is going to optimize our neurogenic rate.

And once we hit our neurogenic stride, then life is a joy at that point. How incredible and how inspiring. And thank you so much for sharing all of this wisdom.

So much information in this one summit. I feel like Peter, in this one interview, I feel like this is like one of the most valuable talks that someone could hear, because it just takes us comprehensive approach, impacts so much value until like barely over an hour.

I'm really just so grateful that you're sharing your time and your wisdom. I want everyone to know where they can dive in deeper. I know you're in the San Francisco Bay area, and you are also on social media and available for teller.

Teller visits as well. Yeah, yeah, yeah. Where can people reach you? Brandt cortright.com. Be right at gmail. I'm on my website. There's ways of contacting me and my books are on Amazon and through the books.

It also has my website on there as well. And thank you for saying that. I am really touched by your words. It's been a real pleasure to speak with you here, Heather.

Always a pleasure. Thank you again.