

# Dr. Jill

Your Functional Medicine Expert®  
Jill Carnahan, MD ABHM, ABOLM, IFMCP

## [#73: Dr. Jill interviews Dr. Ashley Wiegand](#)

### **Text:**

#### **Dr. Jill 00:13**

Hello, everybody, this Tuesday afternoon! I always enjoy my interviews, but today is extra special because not only do I have a professional with neurofeedback, marriage and family counseling, and taking our psychological health to a new level with functional and integrative medicine, but I [also] have my first cousin, Ashley Wiegand. We go way back in so many different ways, and it's been really fun to reconnect on a professional level and to see what Ashley's up to. It's so neat because we have these parallel worlds where we're both working and trying to get people optimally healthy.

#### **Dr. Jill 00:50**

We just had a conversation a few months ago. We've stayed in a little bit of a connection, but you know how it is when life happens. We grew up in a family with loads of cousins, so it's been really, really fun to hear what Ashley's doing with PALM health and to talk to her today. It's extra special because we grew up playing out on the farm and doing those kinds of things in Illinois, and here we are both in our professional spheres and able to talk on that level. I am excited [for you] to meet my cousin, Ashley Wiegand. She is a Ph.D., a licensed marriage and family therapist, and board-certified in neurofeedback, which we're going to talk about today. I especially want to introduce you today to the concepts of neurofeedback, family constellations, and the work around families and how they interplay with our health and healing, as well as the psychological readiness to change some of these

pieces that I have found to be as important as supplements, diet, or lifestyle that impact your ability to find optimal health and healing.

**Dr. Jill 02:00**

Before I introduce Ashley, I wanted to remind you that you can find all of my free blogs and resources at my website, [JillCarnahan.com](http://JillCarnahan.com). The YouTube channel now has 70+ hours of interviews, all free, so please go there and subscribe. It's just under my name, Jill Carnahan, MD. You can find all of the recordings there. This will be there as well in a few days, and I hope you enjoy all of those resources.

**Dr. Jill 02:26**

First, I want to introduce Ashley. Dr. Ashley Wiegand works from an integrated perspective based on her understanding of neurobiology, physiology, psychotherapy, and family systems. Like I said, this stuff is so critical to healing.

**Dr. Jill 02:40**

Just a tiny, brief personal jaunt before I finish her bio: I have worked all my life on my own healing with cancer, Crohn's, and all of that. And I love the functional medicine—the biology, the physiology, the supplements, the diet, the lifestyle. That's critical to healing. But I have seen a level of acuity, a level of severity and complexity, and a chronicity of patients that has really escalated in the last several years. I think partially due to our environmental toxic load, but in another part due to the psychological stressors, especially in the last year. This is so relevant because what I've seen in my own life, my healing, and my patients' lives, is that if we don't address the psychological aspects, the nervous system up-regulation, this fight-or-flight [reponse], and a lot of

the stuff we'll talk about today, no amount of diet, supplements, or nutrition will overcome. You have to do all of it. So stay tuned, because this is going to be breakthrough.

**Dr. Jill** 03:33

I'm going to finish Ashley's bio here. She utilizes QEEG technology to provide brain map evaluations and detect underlying brain wave biomarkers related to the concerns of her clients. Neurofeedback—also known as EEG, biofeedback, and neurotherapy—is used to balance dysregulation in areas of the brain. I'm really excited to talk about this. Dr. Ashley provides psychological and family therapy and psychotherapy. She specializes in working with individuals with anxiety, past traumatic experiences, academic or professional stress, negative religious experiences, life transitions, college-related difficulties, and family conflict. She is licensed in marriage and family therapy, board-certified in neurofeedback through the biofeedback certification, and she completed her doctoral degree at St. Louis University. Ashley, welcome!

**Dr. Ashley Wiegand** 04:24

Thanks for having me, Jill! I'm so excited to be here.

**Dr. Jill** 04:27

Yes, me too. I always love to start with [one's] story—your journey into this area. Did you always know you wanted to do something in this area? Tell me a little about how you got to where you're at now.

**Dr. Ashley Wiegand** 04:39

Yes. I didn't always know, just because I had not even heard of neurofeedback until after I got my master's degree. I think if I had known what it was, I would have picked it because it's this integration that I really love: Connecting with people on a personal level with therapy

and then looking at the science and neurobiology that is neurofeedback. I really like that connection. It's like the brain and the mind. I actually started out pre-med. I don't know if you know that.

**Dr. Jill** 05:14

No.

**Dr. Ashley Wiegand** 05:16

Yes. And then I came to organic chemistry. I'm good at science, but I didn't know that I wanted to do that. I knew I wanted to help people and be in a helping profession, but it was so rigorous. That's what got me to the point where I veered into exploring being a physical therapist. Then, when I did my internship at a hospital, that didn't quite resonate, and I'd always, in the background, wanted to be a therapist but had been discouraged from that path for a variety of reasons. After I tried these other health professions, I came back to that. I finished my degree in exercise science, which worked well later on for neurofeedback because it was very heavy on anatomy and physiology. Then I got my master's in marriage and family therapy.

**Dr. Ashley Wiegand** 06:05

Then, when I moved to St. Louis and was going to a local conference, one of the local professionals specialized in neurofeedback, and that was the first time I'd heard of QEEG—which is the technical name of the assessment, but brain mapping is a little easier phrase to throw around—and neurofeedback. Everything clicked for me because it was looking at two sides that made sense: Our health and helping people. You have the interpersonal piece, which of course is so important, and the psychology. But then you have brain patterns and how our brain might get stuck. I'm sure you've had a patient

who knows that they're anxious and they want to not be anxious, but they just can't seem to shift. We can talk about that more, but neurofeedback can unlock some of that potential by changing the brain from the bottom up instead of trying to have insight about your anxiety and then changing it because you have insight.

**Dr. Ashley Wiegand** 07:07

After I learned about it, I got to do an apprenticeship under someone else, which is a great way to learn, for about five years. Then I went on on my own. And then PALM Health, I believe, has been in existence for five years now, and I got on board about three and a half to four years ago. What drew me there was probably, just like in your practice, working on a team that had multiple things under one roof. This multifaceted approach seems to have a synchronistic effect where people can get better outcomes as opposed to when you just try one thing.

**Dr. Jill** 07:47

I love that, Ashley. In Boulder here, I have neuropsychologists that I know well and refer to, and it's so critical. So many times I call my friend and colleague and say: "Oh my gosh, I have this patient. They're dealing with this. Can you see them?" And we find together that it's such a great team because she can do stuff I don't know how to do and can't do, and I can do the other piece with the physical, the diving deep, and the detective work on the chemicals, the environment, the diet, and lifestyle. What you bring to the table is so critical to getting people well. I love what you talked about. And forgive my ignorance if I use terms [that are] wrong. You're the expert here, not me.

**Dr. Jill** 08:26

Cognitive behavioral therapy—I'll just tell you my experience. That, for someone like me who's super analytical, makes it worse. I just get stuck with the same thought patterns. When I tried the more somatic-based therapies, it was profound because all of a sudden I went below my neck. I always joke that I lived above my neck in my head for the first 40 years, and then when I started dealing with somatic, heart-based, and intuitive-based healing, it was profound. But I've also done some of that work with EEG and seen the patterns. It sounds like, from your perspective, this gets at helping them understand the patterns that are keeping them blocked. How would you describe neurofeedback to someone who has no idea what it is?

**Dr. Ashley Wiegand** 09:03

Neurofeedback works in partnership with how I use it with brain mapping and the QEEG. If you'll indulge me to explain both... Okay. When someone comes in for the initial assessment, besides family psychological intake, it involves putting an EEG cap on the head. It fits snugly like a swim cap and has sensors in it. I put gel in the sensors, and then I record brain wave activity. That's the electrical activity of the brain. It relates to brain-state neuropathways.

**Dr. Ashley Wiegand** 09:35

We have different frequencies that need to have different ratios, and they relate to our arousal and our attention level [and can indicate] if we're groggy or alert. I'm measuring the resting state EEG. There's the medical EEG, which might have been what people have heard. If you have epilepsy, you go to the hospital and get a medical EEG. They're looking for spike waves, sharp waves, and to see if you have that medical condition. I'm looking at their resting state, which is the background.

There's been a lot of research correlating that with certain dysregulation patterns. After I get those two recordings—eyes open and eyes closed—I analyze all of that data in these various databases. It's almost like an objective measure of the interface between the mind and the brain.

**Dr. Ashley Wiegand 10:26**

Anxiety is a good one because there's a lot of anxiety for a lot of reasons. That would be a separate talk. But someone who knows that they're anxious knows that they're worrying, but they can't stop worrying—there's going to be certain brainwave shifts in a brain that's locked in worry. It kind of quantifies this thing that feels invisible. We might know we're depressed or anxious and not want to be, but so often we get stuck because it's stored in our biology, our neurobiology, and our emotional brain, and it's not under conscious control.

**Dr. Ashley Wiegand 10:59**

Like you were talking with CBT, there's an over-emphasis in our culture of things in conscious control, as if we could just hit buttons and turn them on and off and that they just exist in an individual. What's so neat about this is that it quantifies that, so I see how brainwave frequencies could be elevated, which means it has too much power in a frequency in a certain location, or you have too little. Then I go over the results with the patient. It is so therapeutic because people feel validated.

**Dr. Jill 11:36**

Yes! I love that you're going there because I find that even on a food allergy test, when they see the data in front of them—I'm sure you have people in tears at times too—they're like, "Oh my gosh, I've been struggling with this for so long!" And you, Ashley, have finally put a name

to what's going on. There's such a power in that because I think it starts to give them the hope that "Oh, gosh, I'm not crazy," right? And we know they're not. But what happens is that so many people have been in a doctor's office and they say: "Your labs look normal. You're fine. Go home and come back in a year." And the patients start to doubt themselves; they doubt their intuition that something's not right.

**Dr. Ashley Wiegand** 12:12

That's exactly right. I've also had that experience where people will cry just from being believed. That validates but then it also gives us and me a road map. Then I base the neurofeedback protocols on their brain map. The neurofeedback is then the intervention, and the QEEG is the evaluation. Neurofeedback, at its core, is a learning therapy. As I start to explain it, it can seem abstract, and sometimes experiencing it is worth a thousand words of showing and doing a demo. But essentially, how it goes in a typical neurofeedback session or process is that I've localized an area. Let's use anxiety. Someone has elevated fast waves. That's a common pattern with anxiety. I put a sensor on that location and there's a patient screen and my clinical dashboard. I will coach them on how to approach the screen; that's where my therapy hat comes into play. The technical term for the psychologist in the room is operant conditioning. And there's also some classical conditioning at play. It's reward-based learning.

**Dr. Ashley Wiegand** 13:26

Essentially, shifts in our brain waves are something we can not consciously notice. We might notice the aftereffects, just like our heart rate. You and I are smart and we're analytical but we'll never know what our resting heart rate is for instance, because our nervous system isn't set up to give us that information. If we have an Apple Watch, we can find out. But we would never know.



We might know if someone scares us that it bumps to 110 or we are about to faint. But we can't notice the subtle graded shifts in our central nervous system in that way. Brain waves are the same thing. Part of our central nervous system is very real but it's managed subconsciously; we can't consciously shift it. What happens is that the sensors and the digital analysis of their brain waves make that invisible process tangible. Then you can learn to regulate it. That's "where," to quote, "the magic is." Again, someone knows if they're worrying or not but especially in our modern American culture, we're not very in tune, like you said, to trust our intuition or know the subtle shifts. We become very desensitized to these things, which I'm sure you notice a lot too, right?—the physical side.

**Dr. Ashley Wiegand 14:41**

We're training beta or fast waves. I'll set a threshold. Let's say it's at 10 microvolts. When they drop it below 10, like the limbo, then they're meeting the criteria. What they would know subjectively is... I'm going to approach the screen. Usually, if you're trying to train anxiety from a mindfulness approach—meaning don't try too hard, don't get in your own way as much as you can, and take it in and try to quiet your mind—obviously, someone's not going to be very good at it, because that's why they're there with me. But that's the instruction I give them.

**Dr. Ashley Wiegand 15:15**

When their beta drops to nine or eight, they'll meet the criteria and on their screen, they'll get some positive feedback or reward. There might be a little runner for my non-competitive folks who could handle it. And when they quiet their minds, their runner goes faster. And if they start to worry or activate, it slows down. Or they might be watching a nature scene on a video and as they

quiet their minds—10%, as measured by the technology—it might expand or go from black and white to full color.

**Dr. Ashley Wiegand** 15:46

Because of the advances in technology, what's so neat is that it's essentially real-time feedback because all of that can be digitally analyzed and fed back in less than 200 milliseconds. To our brains, that's real-time. If there's a flicker less than that, we can't even consciously notice it. It harnesses the power of self-regulation and facilitates self-awareness [about] these subtle things, like clenching your jaw or a negative thought about yourself—this activation you've learned to ignore. Suddenly, to get positive feedback, you have to become attuned to those things. And then the subtleties of down-regulating it, in this case, get rewarded. That activates our reward system. People earn little points. They win the race car race. There's that intrinsic motivation when you get those little rewards. That's one session.

**Dr. Ashley Wiegand** 16:42

Generally, people will train because the best analogy is that it's like going to the gym for your brain, I say. You don't do it once and say this didn't work, which is obviously not a functional medicine premise anyway. But a lot of times my work is explaining to people what neurofeedback is for them to even know that they want it because it's not something that people know about. Typically, people come to 20 to 40 sessions total, one to two times a week. Then, depending on how they progress, they usually do multiple protocols but that's the nuts and bolts of neurofeedback.

**Dr. Jill** 17:18

Fantastic. More and more people are looking for things like this because they want to go to the next level. A

couple of thoughts: Interestingly, I feel like the first half of my life I spent dissociating and I got good at it, which means, like we talked about, from the head up. I shut away pain and emotion, especially things like anger and sadness. Those were not okay in the system I grew up in so I suppressed those things.

**Dr. Ashley Wiegand** 17:43

Mine either.

**Dr. Jill** 17:44

Right? I find it so fascinating because, even now, it's a coping skill. And I learned it and I learned it really well. I joke because, as I've done therapy work, neurofeedback, and all of these things, I started to feel again. I started to be in touch with my physiology in a way, like you're teaching with neurofeedback. When you are learning dissociation as a coping technique, I feel that in a way it made me more superhuman—and I'm going to talk about this in a minute because it's not a good thing—because I could deny pain, dissociate from feeling, and just push, push, push, push. But what happened was that my body knew the difference, and my body was like: Wait, we don't like this; this is not healthy or good for us. And I got cancer and Crohn's and I got a lot of illnesses, I think partially due to the fact that I was so good at suppressing and dissociating. But my body knew. My body was like: Hey, Jill, we don't like this; let's learn.

**Dr. Jill** 17:55

As I've done the work around this and learned and grown, I feel like I sometimes have to go slower, work a little less hard, and be more kind to myself. A lot of times, I teach patients to be kind to themselves. But what happens at the end of this is that you are a healthier human being. You can show up more fully and authentically. If you don't know how to experience those emotions, you can never

really connect with parents, siblings, and romantic relationships on a deeper level. These things are so critical to life and life skills in every way.

**Dr. Jill 19:11**

Like I said, I learned, in some ways, the hard way about that when I had to go in and go deep. But it's so invaluable because I feel like anyone who wants to ultimately heal from chronic illness, autoimmunity, Lyme disease, inflammatory issues, or any of these kinds of things that we see. Obviously, anyone can benefit, but are there particular types of people that you see at PALM Clinic that really benefit from neurofeedback?

**Dr. Ashley Wiegand 19:41**

Yes, there are. And there are probably some subsets that I tend to specialize in and that respond better. I would say the broad umbrella of anxiety is overarousal and nervous system overactivation. There's a lot in our culture. There's a lot of pressure, rewards, and the perpetuation of anxiety. Under that, there are traumatic experiences, insomnia, chronic stress, and not being able to rest and slow down. We can put them all under there. ADD/ADHD is another talk because I do believe it is overdiagnosed. A lot of times, it might be PTSD, or post-traumatic stress disorder, depression, or anxiety. But that one has a medication that people really like so it gets overdiagnosed.

**Dr. Ashley Wiegand 20:30**

I do think, from my neuro-bio-psychology perspective, there is a conglomerate that is "real" in the sense that there's a certain frequency that is associated with distractibility and that would make it hard to focus. It's just overdiagnosed and overprescribed. On the ADHD front, if it's in an otherwise healthy

family-system-motivated child or adolescent, I get some of my best responses with neurofeedback for ADHD. A lot of times, parents are looking for long-term healing as opposed to putting their child on a stimulant.

**Dr. Ashley Wiegand 21:15**

The other one—and this is where I get to work in this arena more because I work under our CMO, who is a neurologist—is post-concussion syndrome. That slips through the cracks a lot in the medical field. If you don't have these severe things—a structural bleed, structural damage, or something like that—they're kind of like: "Well, go on your merry way." Well, neurofeedback quantifies the electrical functioning and dynamics. Sometimes when you whack your head, that gets thrown off, almost like a subtle bruise. That doesn't get caught. It's not structural.

**Dr. Jill 21:57**

I'm assuming you can see inequalities in the hemispheres, especially based on trauma. There might be global changes if someone has just anxiety or insomnia versus someone with head trauma. You might see more left-sided or right-sided changes.

**Dr. Ashley Wiegand 22:09**

That's exactly right, yes. It'll be more acute and localized, and usually there's a coup contrecoup. It's not an MRI. No evaluation captures everything but a lot of times you can see that it's localized if it's a head hit. It's usually frontal temporal areas, whereas, like you said, other markers are going to be more global. So those are the three broad clienteles. They're presenting goals. And postconcussion a lot of times, folks are very sensory sensitive. They might have mood dysregulation or headaches. They're sensitive to neurofeedback because it's a little bit of a brain workout. So that's where my expertise comes in of

titrating it, the protocols, and the amount of time. But they're some of my best responders because they are so sensitive that they respond faster.

**Dr. Ashley Wiegand** 23:11

I would probably say my practice is roughly 60/40—neurofeedback to therapy. I have some that are separate and some that are a blend. What I love about the blend, like myself collaborating with someone like you, is that someone might need work for cortisol that has been running off of adrenaline their whole life or is not eating healthy. Then they come and get neurofeedback, which sometimes is an easier entry point for people than therapy because I need to know some goals, but we don't have to talk about every hard thing they've been through in their life. And sometimes people like that or they've already talked to someone, and they feel like they've gotten as far as they can.

**Dr. Ashley Wiegand** 23:55

Let's say they're a great responder to neurofeedback and they're having many panic attacks a week—let's say one a day. They respond well; they're down to maybe one a week. But let's say they've had panic attacks for 20 years, so they've worked around that by working remotely in IT for 20 years. Now their anxiety is 80% gone. But that's where the therapy side and the other things you were talking about—patterns, perception, identity, emotional awareness... They might have less anxiety, but they're not going to have the perspective of the world that "I could go to a party or a get-together. I would know what to say. I would feel confident." They're not going to know how to read their emotions when they're challenged. There's been all these things in the psychology-therapy realm that they're out of practice at the bare minimum and don't have the skills strengthened because they've avoided it.

**Dr. Ashley Wiegand** 24:47

It's a different version of what you were talking about with the dissociation and even emotions. It's overwhelming to feel emotions again. And I can relate, of course. Here's our cousin card being played. Definitely, "Don't be angry. You don't have negative emotions. Analyze and think a lot."

**Dr. Jill** 25:05

Yes. That German-Swiss stuff is like...

**Dr. Ashley Wiegand** 25:10

"Be super productive, but don't cry. No crying." It sounds so obvious, but it's so novel when you go through it. When you start to feel your feelings—[remember that] they were suppressed for a reason: They were hard. And if you weren't taught or it wasn't normalized or modeled, like "It's okay to cry..." Feeling depressed is a clinical diagnosis that is very serious, but feelings of depression are also a part of the human experience. Feeling anxious is sometimes a part of that. But you're atrophied in your skills if you weren't taught and it wasn't taught to be okay to have those feelings.

**Dr. Jill** 25:52

Yes. I remember when I first started letting these [feelings come] up and dealing with them. There was [something] like a two-week period when I first opened up on some of these emotions. I was completely overwhelmed. I didn't know if I could function that week. I thought, "Gosh, this must be what some people feel like to be depressed," because I hadn't experienced that. And what it was was 40 years of sadness, like the floodgates were opened. And it was normal physiology. It wasn't anything abnormal. It wasn't a clinical diagnosis of depression. But what I realized was, "Wow, this is normal."

I had a lot of compassion for myself during that time because I was like, "It's okay to slow down this week" or to know that you feel overwhelmed. But it took being kind and compassionate to myself during that time because it was so foreign. I had suppressed that for so many years. It was different.

**Dr. Jill** 26:42

Another thing that, as you mentioned, I thought about: I always thought I was an introvert. Some people laugh at that because they see me out and about, but that was part of my highly sensitive nature and the overstimulation and all those things with the brain where I needed to retreat from too much stimulation and too many people. I could handle little bits at a time. Now that I'm healthier in all these ways—neurobiology, psychology, physical health—I can handle a lot more interaction. The truth is, I think I'm kind of an extrovert. I was just highly sensitive in the senses of the brain and all those things so I had to retreat so often. I thought that identity thing was so critical because I think a lot of patients even identify with "I'm sick," "I'm an introvert," or "I'm too much for people." All those messages could revolve around this overstimulation of the brain, right? Then, as you get them in a healthier spot, all of a sudden, like me, I'm like: "Wait, maybe I'm not an introvert! Maybe I'm actually an ambivert or an extrovert that just needs quiet time." And I bet you see that a lot with patients, don't you?

**Dr. Ashley Wiegand** 27:41

I do. Yes. You can really see that unfold or shift. And like what you were describing, if we're suppressing our emotions... I always tell my clients that emotions are neither good nor bad; they're just information. If you're allowed to feel them, they can flow through. They inform you. Sometimes it means that the situation is bad and you need to leave it. Or sometimes it means I'm being



challenged; I'm going to stick it through. But that's part of the normal experience. But if—and I did this myself as well—you spend so much time suppressing the emotions, I think it's draining. And then you think you need to perform a certain way. "I need to be a certain way because that's the feedback I got from my family system" and the micro-culture that you grow up in. I also conceptualize it. What you were saying is that it takes so much energy to not be yourself and to perform and be cut off. It's exhausting, right?

**Dr. Jill** 28:44

Yes. It's like holding back a dam. Like holding back a big... All of a sudden, when you relax into being your authentic self, it's so much easier. Even though you have to deal with the emotions, it's so much easier.

**Dr. Ashley Wiegand** 28:58

That's right, it is. There's still the human experience, but it's like you feel it in your bones when you're feeling authentic and congruent with yourself and letting yourself be a person, [which] is also a phrase I like.

**Dr. Jill** 29:14

I love that. And our body knows. Autoimmunity—I'm sure you see a lot in the PALM Clinic too—if we look metaphorically, is an attack of self. How much more metaphorical can that get? I always feel there's some piece of either self-unacceptance or self-loathing. There are pieces of that that are always at work in someone with autoimmunity that we always want to deal with if possible, including my own. As we embrace and love ourselves for who we are and how we're supposed to show up in the world, the body will heal. It's amazing!

**Dr. Ashley Wiegand** 29:50

Yes. I love that. It is the attack of self. I see a lot of folks locked into being self-critical and very negative towards

themselves. Our brain's limbic system—that's our danger system—doesn't differentiate between physical and psychological threats. When you are self-critical, you're basically becoming your own tiger and shooting off the sympathetic response. "I haven't changed as much as I want to change" or "I failed in this way." Factually, in your physiology, one of the worst things you can do is attack yourself because that makes you more dysregulated, and then you can't do the thing you might be attacking yourself for.

**Dr. Jill** 30:42

I love that analogy because this is so important for overall healing. We didn't talk about specific brainwaves. Do you want to give us a little brief tutorial on alpha versus beta versus delta?—because I know [inaudible]. And I know you're the expert there too.

**Dr. Ashley Wiegand** 30:56

Yes, I would love to. There are five main frequencies that we look at in the field. The slow waves are delta and theta. Alpha is the mid-range frequency. High betas are the fast waves. There's also gamma, which you might have heard of. I feel like the two that get talked about the most are probably alpha and beta. Alpha was the one that was first discovered and trained for neurofeedback, kind of by accident, back in the '60s. That has a lot to do with sensory integration and mood regulation. They think it correlates with the thalamus going to the cortex. The thalamus is the gateway of our sensory information, so it's these large oscillations in the background. I'm trying to give you a summary but not get too technical because it gets technical really quick, and I don't want to bore people.

**Dr. Ashley Wiegand** 31:54

For instance, if you have a deficit of alpha... There are a couple of studies that found children of alcoholics had a deficit in alpha. When you have a deficit of alpha, that means your resting state in your nervous system is anxious. What's interesting is when we drink alcohol, it increases our alpha, so you have the self-medication piece. That's why if you're not a child of alcoholics and you drink alcohol, it might be fun and nice, but it's not this huge act of empowerment to not become an alcoholic. But if you have an alpha deficit and suddenly drink some alcohol, it increases your alpha. It's self-medicating. Suddenly, it's not as hard to be in your own body and in your own nervous system. So, that's someone who would be more vulnerable to abusing that. But it's really because it's regulating their nervous system, not in a sustainable long-term way but with a short-term relief.

**Dr. Ashley Wiegand** 32:54

That's something I love so much about this approach: It's so humanistic. It's looking at the whole picture and not saying [things] like, "Well, people are just bad and they always do bad things." There is usually a reason someone gets stuck in a certain way. It looks at it from this more contextual, respectful way, which I think gives understanding and answers. So that's alpha.

**Dr. Ashley Wiegand** 33:21

Alpha is also correlated with flow state or being in the zone, which are big buzz phrases. It feels really good to be in a flow state. If you play an instrument or you've done theater or sports, you're immersed in the moment. There's no self-talk or self-criticism. But you're also not lethargic or sedated. You're in that sweet spot of arousal and immersion. Doesn't it feel so good? And there's some research [showing that] when people access the flow

state more, their quality of life is higher. They have more fulfillment and joy. Alpha is correlated with flow state and being in the zone. A lot of times, it's this prime alpha state where your alpha is elevated but not too high and your other frequencies are lower. I can train the alpha state or train meditation.

**Dr. Ashley Wiegand** 34:16

Beta—those are what we think of as our thinking waves. Those are the ones we could consciously quantify the easiest. If you're learning a foreign language or if you're doing a calculus problem, your beta needs to ramp up. It's problem-solving, goal-directed activity, moral judgments, and decision-making. That's brain activation. We need to be able to activate our brains for these tasks.

**Dr. Ashley Wiegand** 34:43

Where we get into trouble, and this is where I see another pattern, is that your beta stays elevated. That correlates a lot with people who are too much in their heads and are trying to think through their feelings and life. Even if they're trying to quiet their thoughts, they can't. Training down beta would be another pretty common protocol that I do. If your beta is too low—a lot of times I see that more with ADHD or in post-concussion—your brain can't ramp up like you need it to, so you feel overwhelmed, you forget things, you drop tasks, or that sort of thing. The slower waves correlate with unconscious processes, so they're a little bit trickier for people to train in session with me. If someone's pretty good at being intuitive and letting go, then they can train these [wave patterns].

**Dr. Ashley Wiegand** 35:37

Probably the number one question I get from new clients is, "I don't know what I'm doing to get the feedback," which I have a lot of empathy for because we really want

to understand it. In our culture and society, we overvalue conscious processes and ignore and neglect subconscious processes—the emotional and the messy. I coach my clients, saying that's normal. It's because the technology is sensing these shifts in your brain waves. No one can sense fluctuations in their brain waves. We might know if we're more focused or if we're more tired, but we can't actively sense real-time shifts. That's why you can't feel it, which is why you need the neurofeedback. It's giving you information you don't already have.

**Dr. Ashley Wiegand** 36:24

Theta correlates with, they think, limbic system function—more midbrain, deeper brain function. Beta is more of our external focus and theta is more of our internal regulation. A natural time when our theta might go up and we go more into a theta state would be really deep forms of meditation when you lose track of yourself, which is a fun state if you've ever been in it. If people are hypnotized, they're going more towards theta, or if you're in that real daydreamy state.

**Dr. Ashley Wiegand** 37:00

Say it's sunny and you're swinging in a hammock and you're kind of awake but you're kind of not and you're in this fun, woozy state, so to speak. That's more theta. I see that that's a common pattern if people are fatigued or have brain fog. But also, [with] a certain kind of ADHD, people have above-average levels of theta, which is interesting. Not surprising, it used to be a differential marker to diagnose ADHD, which could be used to differentiate it from something else—an elevated theta/beta ratio. But in the last 15 years, they've done that again, and it's no longer a differential marker. They think it's because kids on average are getting two fewer hours of sleep than they do because of smartphones, tablets,

and everything. So we have kind of this epidemic of not enough sleep. That marker now may just mean someone is not sleeping enough and getting low levels of sleep.

**Dr. Ashley Wiegand** 38:04

Lastly, Delta. That's probably the one that's trained directly the least. It's kind of the foundation of all the other frequencies. They think it correlates with brain stem and deeper brain function—those regulatory processes in the background that are really important—but they're subconscious.

**Dr. Jill** 38:22

Would that also correlate with deep sleep like the Delta?

**Dr. Ashley Wiegand** 38:25

It does. That's right. Yes. It correlates with deep stages of sleep. When I see it elevated in my office, it might be [due to] brain injury or a learning disability. Or sometimes by folks that have these autoimmune clusters of symptoms like brain fog, fatigue, Lyme, that sort of thing. So that's your quick run-through.

**Dr. Jill** 38:46

That's super helpful. And it's interesting, the neurofeedback side. I've been playing with PEMF mats and pulsed electric lights on the brain. I have a Vielight, which is a device that does mitochondrial brain light stimulation. There's some data on that. It's still controversial, but my particular frequency is more alpha wave. It's interesting to me because, in my experience, when I had the worst of the mold about five years ago, I had a lot of trouble with focus and concentration, and that alpha, whatever it was, really helped me get into that state. And I love to use the nutrient theanine. I don't know how much data there is on that, but those are just my little, simple hacks for feeling that focus and clarity

without any anxiety. [This is in] layman's terms of what you just described. I feel like that alpha is so critical to that state, which is what you're saying. And you're saying many people are stuck with too much beta related to alpha, or maybe too much theta related to alpha, and they're unable to focus.

**Dr. Ashley Wiegand** 39:50

Yes. It's too much beta related to alpha or that marker that used to be for ADD/ADHD was too much theta related to beta.

**Dr. Jill** 40:00

Got it. Interesting. It's so fascinating. And it's so fascinating that [with] these hertz there's mimicking of EEGs and the PEMFs. They're all around our world. There are other mimics of these frequencies that have an effect on us. The stress of the environment, the electromagnetic frequencies—we have some data, but it's not super sound yet—I have no doubt that a lot of these other things are affecting our bodies and brains more than we even think.

**Dr. Ashley Wiegand** 40:31

Right, I agree. Yes. I think the data is still coming along. It would make sense. I'm not an electrical engineer, so I'm supporting this from someone else, but the fluorescent lights emit a high beta. When people are really sensitive, it would make sense that we're absorbing that in our physiology. And there's that law of physics that if you have a tuning fork, if it's bringing out a C note and you bring it by another one, it absorbs. Obviously, we absorb waves as well. A reasonable hypothesis, I think, is that if we're absorbing beta, especially if you already have too much, it could be overactivating in your body. Another line of thought on the reverse is that a fire has a slow flicker rate. If you're sitting by a fire, probably in the delta range, then that might be why it's so calming to be by a

fire because there's that slow flicker rate. I don't have data to back that up, so think of that as anecdotal from talks with colleagues and working with people.

**Dr. Jill** 41:38

Yes. And the same with me. I'm not the expert, but I do know that the Schumann frequency is the earth's natural resonance. And that, I think, correlates more with some of the Delta [waves], some of the calming [ones]—I think seven or eight hertz.

**Dr. Ashley Wiegand** 41:52

Is it 7.8 maybe?

**Dr. Jill** 41:53

Yes.

**Dr. Ashley Wiegand** 41:54

Yes. That would be right at the bridge of theta and alpha. It's interesting to think about that because there's a common training and neurofeedback as well; it's called alpha-theta training. They use it a lot for people who have anxiety or we use it when someone has past trauma. But a lot of times, it's for someone cut off from their emotions. You train alpha, and then once you get better at training your alpha, they train someone in a theta state, which can be this interesting, almost hypnagogic state. So it's interesting that the Schumann resonance is right at the cusp of that.

**Dr. Jill** 42:34

This is just off the cuff, so I may not be accurate, but I'm guessing that when you access theta a little bit, there's almost a subconscious state where you're open enough to... Seeing the somatic therapies in patients and even in my own life, when you're open to the subconscious and intuition, that's where a lot of the powerful healing shifts



come from because our body knows what to do. It's just a matter of shutting off the brain long enough to feel and heal. I'm guessing that that's part of why it helps—because you're able to access what your body already knows to do, which is your subconscious programming.

**Dr. Ashley Wiegand** 43:09

That's right, yes. That's it. You're exactly right. That's what it's thought of as—that you're training into accessing the subconscious, which is why it needs to be done by a professional. If someone has traumatic memories, you don't want to do that right away. If someone doesn't, then it's a little less risky and a little more exploratory and fun.

**Dr. Jill** 43:29

Oh gosh, Ashley, this is so fun. We could talk for hours! We're going to have to do [inaudible].

**Dr. Ashley Wiegand** 43:34

Yes!

**Dr. Jill** 43:38

Obviously, you're having great success. I think what you're doing is so important and powerful. A couple of things: First of all, where can people find you, especially if they're in your area? Go ahead and give us your website or wherever we can find information about you and what you do.

**Dr. Ashley Wiegand** 43:52

Sure, yes. I work at PALM Health. I'm in St. Louis, Missouri. You could just go to our website, PalmHealth.com. It's spelled just like it sounds. And then, if you want to know more about me, I would just be under the About tab under the staff bar. I'm trying to think [about] what else. The address and the number would all

be on the website. PALM Health. And we're on all the social media—

**Dr. Jill** 44:19

Yes. And I will include that link. Anywhere you're listening here, we'll have that link if you want to find out more and more about neurofeedback. What if they're in Rhode Island, Washington State, or somewhere [else]? Where would they find someone who does what you do? Say someone calls from out of state and they can't see you; how would they find a provider like you?

**Dr. Ashley Wiegand** 44:42

Yes, that's a good question. There's a professional organization that manages a directory for that. It's called BCIA.org. That's the certification alliance for biofeedback and neurofeedback. Exactly what you said, when people try to find me—I only can see people in Missouri—you go on that website and there's a tab right at the top. It says, 'Find a Provider' and then you type in your zip code. What's useful about that is that it's a directory to find resources and providers in your area. But also, that is the organization that certifies people, so you have some experience and quality control because neurofeedback is a specialty you add onto something else. It's not a profession by itself, unfortunately, so you get a wide array of experience and training from people in the field. But at BCIA, if you go there, they're certified. They've had this universal training we all have to have—passing the test, certain mentorship, and continuing education. So that's where I always direct folks.

**Dr. Jill** 45:46

Perfect. That's actually what I was going to say, because I've seen hairstylists put out... And I'm like, 'Uh!' What you talked about is so critical because you have this family marriage counseling degree. You have your Ph.D. You've

got a lot of background. That container, creating a safe place for people to do this, is really, really important. So if you're listening out there, make sure you find someone like Ashley who's credentialed, who has the training, and ideally who has some other background, because what happens with some of the stuff is that things come up. And if you don't create a space that's safe for that to happen with the proper titration of the therapies, it can be really overwhelming or too much for people. Ashley, thank you for today! It is so fun to talk to you. And I know this was awesome information for everybody listening.

**Dr. Ashley Wiegand** 46:35

Thank you so much for having me. This went so fast and it was so fun. Thanks for having me!

**Dr. Jill** 46:40

You're welcome.