Introduction and Speaker Background

Welcome to the reverse Alzheimer's Summit. I'm your host, doctor Heather Sanderson, and I'm so pleased to have Doctor Hedaya joining us today. He has been at the cutting edge of medical practice, psychiatry and psychopharmacology since 1979.

He's been paving the way with the publication of his first book, Understanding Biological Psychiatry, published in 1996. He then pioneered the use of functional medicine in the psychiatric field.

He is now pioneering the use of healing technology in the treatment of neuropsychiatric disorders. Doctor Hadiya is a distinguished Life Fellow of the American Psychiatric Association, clinical Professor of psychiatry at Georgetown, where he has been awarded the teacher of the year on three occasions.

In keeping with his ability to move the field forward. He was first invited to teach Pine Psycho Neuro immuno endocrinology at Georgetown Psychiatry in the early 1990s.

Wow. Really, really paving the way for all of us who have followed. He's a faculty member at the Institute for Functional Medicine, author of two additional books, The Antidepressants Survival Guide and Depression Advancing the Treatment Paradigm.

He's also the founder of the center for Whole Psychiatry and Brain Recovery. Doctor Hedaya is an an editorial volunteer for advances in mind body medicine and alternative therapies in health and medicine, and he's published several articles and peer reviewed journals over the course of his career.

He's also been featured in the local and national media on 20, 20, 60 minutes, Vogue, The New York Times, The Washington Post, and many others. On many occasions, he is a frequent, nationally and internationally recognized speaker.

His website is Whole psychiatry.com. Doctor, today I thank you so much for joining us. Welcome. Oh, thanks for having me, Heather. It's a pleasure. Really an honor.

So I'm just, you know, so curious. It's always really a privilege to get to talk to you because you have been doing this for decades and you have learned so much along the way.

So I'm curious how effective the current approach to neuropsychiatric conditions is from your perspective. It's a really great question. You know, actually, I was talking with my son, who's a physician this morning and, I was telling him, you know, the the patients are just getting so much more complex now.

And I don't know if it's who's coming to me or if it's the nature of the world. And he said, well, the whole world is getting more, more sick and more complex.

So it's it's hard for me to say, but I think that, that the, the, the nurse, right at this point where I am anyway, is that really to deal with the types of people that I'm seeing who are very complex and treatment resistant?

We have to look at the whole gamut of, functional medicine as well as traditional medicine and psychiatry approaches. And then what I, what I found, actually, is that despite a successful functional medicine program, that, in fact, that the brain itself is not really fully healed, which is kind of striking.

I can actually share my screen and show you some slides if you like. Yeah. I'll show you that. This was the case that opened my eyes. Really? About three of the about three and a half years ago.

Let me share my screen here, and I'll show you here. And I'll show that it up here like this, so you can see it a little larger there. So this was a 58 year old female who had mild cognitive impairment.

She came to me with mild cognitive impairment and, acquired prosopagnosia, associative acquired frozen agnosia and temporal lobe seizures, which hadn't really been diagnosed.

And basically for seven years, she was having trouble recognizing the faces of people that she was treating and working with in her business. So she had to make extensive notes, to know whether she ever saw the person before or didn't see the person or whatever.

Anyways, there's a whole family history and timeline from traumatic brain injury when she was four, when she was unconscious, abused by a father, to drinking excessively, to exposure to, you know, high CO2, low to oxygen environment for several months actually, and depression perimenopausal and then after menopause a year into menopause.

Functional Medicine and a Complex MCI Case

Pros of agnosia with difficulty recognizing faces, impaired memory of World war, word recall. And then she, in fact, so our neurologist, they diagnosed with sleep apnea, which she treated, and just to fast forward here, we treated her functional medicine conditions, pretty thoroughly, and she felt much better.

And then what I did is I said, well, let's look at her brain. So let's look inside her brain with a quantitative EEG. And, this is what we found. And, for people who were watching, who were seeing this, you could see here anything in gray.

This is a picture for people who are not seeing this, is, kind of like an MRI of the brain. And it's not really an MRI. It's a functional test of brain neurological activity and neuronal connectivity.

So we can see the surface of the brain. These are the surface of the brain. We can see the different tracks in the brain and how they're connecting to each other.

And we can even see deeper structures in the brain, the thalamus, different nuclei, potassium and caudate, etc. we can see the cerebellum, etc.. So we we took a look inside her brain to see, you know, how is it doing after this functional medicine.

And she felt better and she had significant symptom relief. She still had symptoms and had trouble recognizing faces. And what you see here, the Red cross here, here is the area of most abnormality.

And this is the hippocampus right here. And you can see that despite the functional medicine and despite feeling significantly better, her hippocampi, there's a woman who ApoE4 homozygous with five relatives with ApoE e4, with dementia.

This this woman's hippocampus. Despite the functional medicine protocol, was still abnormal. You can see that here. And you can see the connectivity of different parts of the cortex of the brain.

This over connectivity and under connectivity and blue over connectivity. And this is basically saying, like, if I'm yelling in your ear to communicate to you, you know, I'm yelling something, but it's so loud that you can't really get the information.

And if it's blue here, the under connectivity is like I'm whispering. You kind of think I'm saying something you're not really receiving the information.

So you could see on this image in the lower right quadrant here that there's both over hyper coherence is what it's called. And hypo coherence between different areas of the brain.

And then in pink here on the right you see the surface areas of the brain that are abnormal. So this is kind of where she was after functional medicine, which was really a sounding to me.

And to, fast forward here. I'll take you down here to where she this is this is where she was now after treatment with, the High Line technology. This is where she was. And for the people who are not seeing this, everything is normalized.

Virtually everything is normalized. There are a few areas of hyper coherence and hypo coherence in blue and yellow here. But you can see the hippocampus now, instead of being 2.7, standard deviations from the norm is now point four standard deviations.

And in fact, this was so astounding that we published this. We just published this right here. This was just published here. This case. And so that's, long winded answer to I want to take piece this apart because a lot of our listeners here, they're not medical professionals and they don't know everything.

So I want to I want to help translate it a little bit here. So you basically had a woman in her 50s who had the perfect storm of basically the traumatic brain injuries, the genetic predisposition, the family history, some trauma.

She went through menopause. She was having significant symptoms of memory loss and not being able to recognize people's faces. This was interfering with her ability to work.

And you took her through, a functional, a comprehensive, functional medicine treatment plan. So she got essentially the best in what we know about for cognitive function, for brain recovery.

But you could see that in her hippocampus and the memory center of her brain, that she didn't get as much benefit as you were hoping she would. And so you did, this highlight, I say it for me again, highlight, High Lane, which stands for hyperbaric quantitative EEG Directed laser. Le.

The le is laser and knee is neuro neural exercise, typically neurofeedback or other types of neural exercises. I am so excited to hear more about how you do that.

What are the nuts and bolts? What would someone how would someone know that that would potentially help them? And then what would it look like? Is it once a week?

Is it every day what it treatments look like? Great question. So so what we do is we look we use the chagi this quantitative EEG, which I will explain for people, give you give you some background on what that is.

Okay. Here we go. So this is a this is a quantitative EEG, this squiggly lines here. Okay. And, what if you're if you're listening to this, basically we have a map where we basically put a cap on people's head and we monitor the electrical activity at 19 different points.

Each of these circles here is one of the points. So you see the frontal area here. Other frontal areas here in the central and temporal areas parietal occipital areas.

So it's 19 different points as well. Established technology accepted by the American Association of Neurology. And we get the electrical signals from all of these points.

And then through a very, very sophisticated algorithm, you can actually take this data and know what's happening on the surface of the brain and all of the different surface areas of the brain, the connections between different surface areas, the the information highways, if you will, the neuronal pathways, the hubs, which are the networks, like the cities in the brain, you know, and, you get all that information about what's over functioning, what's under functioning, what's well connected, what's not well connected.

And then based on that, you can understand well, is this a head injury? Is this, is this Covid was one case I have that I can maybe show you? Was was it hypoxia at birth?

You know, you can. In other words, you can. Is it is this a generalized metabolic condition? You know, you can get clues about what is going on. And based on that, you can decide. I decide, are we going to use hyperbaric?

Are we are we going to use laser. Are we going to use, neurofeedback? What what's the best approach here. And that's that's what we do. And it's it can be very, very specific.

So sometimes it's a combination of hyperbaric laser and neurofeedback. Yeah. And sometimes just 1 or 2 of them. Yeah. Yeah. And so what might someone expect.

It sounds like it's very individualized based on what you find in the data.

How QEEG Guides Personalized Brain Treatment

But what could someone expect. How long did it take for this one, in this case that you shared for her to start getting symptomatic improvement? So it's very interesting.

That's a great question. You were asking great questions. So this is was astounding. So the first laser treatment she came back into my office and she said to me I was just scheduling the next treatment.

And she said, oh my God. I couldn't remember the face of the person I worked with this morning. And. And his his wife's dimple. Oh my God, I can remember.

And she actually recovered her facial recognition. And it never went away. Okay. That's because she had brain cells that were kind of liminal. They were they were alive, but they really weren't functioning doing their job.

They were just staying alive. So we woke them up. Then in terms of the hippocampus and the memory that took 30 treatments over the course of three months, and we actually showed over the course of three months that she improved.

And then she actually improved even further. A month after the treatments were stopped. And then three months later, three months later, she actually regressed without treatment.

So in her case, she needs maintenance treatment because she has an underlying pathology, which is this ApoE e4 gene genetic problem. And so she needs ongoing treatment.

Some people don't. Some people need ten treatments, you know, one treatment every maybe twice a week or sometimes a treatment three, three times a week for for example, for depression, you might only need ten treatments.

Some people I have a patient who had depression since he's 12, is 40 years old, and he he needs ongoing treatments, but he is depression free for the first time in however many 28 years, right?

Well, so a consistent with functional medicine, instead of this reticent approach that we tend to we, you know, champion here, there is a lot of individuality, right?

This is not a cookie cutter approach. This is very much let's see what data we can we can find for you specifically. Let's create an individualized treatment plan.

And then let's assess how things go along the way that it's not going to be super predictable all of the time, but we get some sense based on what's helped other people.

I want to dive in because you have so much expertise in psychiatry. There's this interface between depression, anxiety and risk for dementia. Can you tell us a little bit more about how those two things fit together?

Yeah. So that's really, that's really fast to eating, right. It's also a little scary, right. So the first of all, the evidence

seems to indicate that, if you have recurrent depression, your risk for MCI or dementia is somewhere around 40, depending on the study, 40 to 60%.

Okay. That's really high. If you have PTSD, your risk for dementia is also significantly increased. And interestingly, with PTSD, the type of dementia that you're most likely to get is a frontotemporal dementia.

It doesn't mean that's is what you'll get, but you're most likely to get that. So the question is like, what? How does how are these things interacting with each other?

And I think the best way I can understand it is that in some cases that the depression or the anxiety is actually the earliest manifestation of a neurodegenerative process which is activated by genetic vulnerabilities, environmental factors that we all know about in functional medicine.

That that I can think of a case of frontotemporal dementia, where I think the first manifestation was the person, having panic disorder, sudden onset of panic disorder, at age about 32 and then developed his dementia in his 50s and passed on by the age of, I believe it was 62.

Well, so you're saying that maybe that frontotemporal dementia was showing up even in his 30s, but manifesting as panic attacks versus as a dementia, and there's like a spectrum and the early kind of prodromal phase is anxiety.

Or maybe for some people, depression. That's right. I, I read, I couldn't tell you what the source is, but that the, there's actually abnormalities in neuronal function from birth and people who are able for, you know, whether that's sufficient to cause dementia, it's obviously not in most cases.

Right. But but it's so that's what I would say. It's, early manifestation in maybe, say, 30, 40% of the cases or so. And so with maybe for, for positive patients, people who are homozygous or even heterozygous, maybe a 3 or 4.

What do you recommend? Are there ways that they can take, you know, that additional care to make sure they're in the 50 or 60% of people who do not end up with dementia, despite this genetic predisposition?

Yeah, well, there's so much that can be done. Right. And the first the first challenge, I think, is to have a good discussion with the patient about, do they want to know if they have the genetics or not.

It's a it's worthy of not just one discussion but multiple discussions because for some people probably many people knowing that they have a gene that increases their risk for dementia could be, it could be devastating, can be frightening.

It could cause depression and anxiety in and of itself. So the first question is, if you knew this, you know, could you handle it? How would you manage it?

What are the pros of knowing? What are the cons of knowing, you know, what are the pros and cons?

Depression, PTSD, and Dementia Risk

Some people decide, look, I'll just do what I have to do anyway. I don't want to know. All right? So. But once you decide to go down that path, obviously, I would say obviously lifestyle medicine is is critical, right. So from dietary work, you know, if you're ApoE e4, for example, you know, mano a mano saturated, you know, fat diet, etc., lots of greens and colorful vegetables and keeping your inflammation down.

I'm, I'm very big into looking at some of the other genetics that control inflammation like the in our 3C1 Fkb five genes, which are our genes that, help you, to transmit the signal, the cortisol, stress hormone, the signal has to be transmitted added to the nucleus and then to the genes so that the genes can respond to stress and inflammation.

And a lot of my patients have many snips, many variants in these genes. And so they are effectively glucocorticoid resistant, meaning they have their stress.

They make the cortisol, but the signal does not get transduced or conveyed to the genes efficiently. And they're much more vulnerable to immune system problems, to depression, to suicide, to anxiety and to PTSD.

Right. So this is a big deal. And if you're talking about controlling inflammation in the long term for to prevent dementia or neurodegeneration, then you obviously want to control inflammation and through diet through environment, no mold in your house, etc..

And and also make sure that your signaling is proper. And then I would think from weight, from what I gather here, is that treating it effectively and efficiently and probably aggressively with something like the healing therapy, if you have those early signs of, yes, MCI, but even depression or anxiety or PTSD or traumatic brain injuries as well.

Getting ahead of all of that before you start to have memory loss seems like it would take a lot of sense. I think it does. I think it does. I mean, I can I can show you if you the like a case of a traumatic brain injury that we treated.

If you'd like to see that, you tell me. Yes, yes, I left it. Certainly. We know that traumatic brain injuries are one of those causes of dementia. And there's, of course, a lot of, a relatively large amount of data around combat veterans and then, athletes who have had repeated traumatic brain injuries, but also, you know, there are many women who suffer from abuse and, and, well, not just women, but lots of people who suffer from abuse, especially formative brains.

If there's been child abuse that they then end up, with not only PTSD but TBI and that that puts people at risk for less cognitive function. And so understanding that, like it's not your fault that and then maybe there are interventions that can help turn this around so that you can get that optimal function back.

It's the hope that I would like to share with our listeners. Yeah. I think you're there's so much hope. I think it's really important that in my opinion, dementia is preventable.

And that's where it's at. It's really about education and prevention and that's, that's, that's where the whole psychology comes in. Right. Like how do you wrap your head around this disease that, you know, maybe a 25 years old or 30 years old and, you know, I'm not going to worry about that.

Well, now's the time. Right? So that takes, education and takes coaching or maintenance or visits to doctors and doctors who are thinking that way. Right.

And, but I'm pretty convinced that, it's about prevention in most cases and prevention, or pushing it out ten years or whatever it is that we can we can do that.

I mean, I have, a case to show you how plastic the brain is. Let me, let me share this other case, which is, pretty pretty. It's pretty amazing. Really.

I'll show you this. I mean, that I. I couldn't agree more. I believe that for my generation, especially, Alzheimer's is optional, right? We know so much how we can prevent it.

And what are your thoughts about reversal? I know you just shared a case. Is that something you're seeing regularly? Yeah. So here's a guy. This is a guy who had, Let me see.

I'll scroll up here through his case history a little bit here. So this is a guy who had mild cognitive impairment. When he was a young kid, he had bedwetting till age 12, which is often a sign, actually, of some neurological problems.

But, he did okay. And then he, at age 15, developed severe depression. And then he had some high productivity years, alcohol abuse. Then he had major depression.

When he was about 24 and then, 26 and then in his early 30s. Then he was treated with Prozac when it came out. And then finally 2004, he stopped marijuana and alcohol and treated himself with appropriate and and and then developed rapidly progressive cardiovascular disease.

So by the time he came to me had mild cognitive impairment, trouble with name, spatial disorientation, word finding, etc.. So he was and he was worried.

And he's a he was an executive who was you know, he was getting by. And there's nothing mild about mild cognitive impairment. Right.

Prevention, Genetics, and Brain Plasticity

That mild cognitive impairment is significantly affecting people's day to day lives. That's right. There's nothing mild. It's kind of scary but it's reversible.

It's reversible. So we with functional medicine you could see he had pancreatic insufficiency. He did have that gene I was telling you about the North 3C1.

And he had abnormal Acth stimulation tests. So we treated him with some hormones and got him off his Lunesta and corrected his nutrients. And his lifestyle got him on a high intensity interval training and worked on his diet.

And, you know, he did very well. But we did a QE, g and his G quantitative EEG revealed a pattern consistent with mild vascular dementia. And I won't bore you with the specific details of that.

And we made a little plan for him. This is not going to make too much sense that people. But we made a plan for him of where we're going to treat in these yellow areas.

You can see we treat it in the frontal area. It's called F7, F3, F4 on the right, and then C3 C4 in the central area over the motor strip area and then the temporal lobe on the right.

And when you go treatment is that with laser or with no laser okay. This was laser and hyperbaric oxygen. So here in this image here on the left, you see the surface of his brain is all all gray.

The surface of his brain is completely normal. Okay. But you can see here in the blue connective between the different areas of the brain is very poor, the different parts of his brain not speaking to each other, basically.

Okay. And this image here with the red circle is just kind of showing you the same thing in a different way. Like we can expand this here and show this specific area of the brain.

How is it talking with this specific area of the brain. And so there's a lot more detail we can get that I'm showing you here. We treated him and this is this on the left here is before hyperbaric oxygen and laser and basically what you're seeing his poor connectivity between different brain areas.

And this is after the hyperbaric oxygen on the right here and the laser and you can see is virtually normalized, right then we looked at something called the salience network in the brain.

And the salience network tells you like what's what's salient what's relevant. You know, should I care about this or not? Is this going to give me a reward or not?

You know, that's what the salience network does in his salience network was a little bit overact, dysfunctional, I should say, and everything bothered him and he wasn't regulating that.

And what we look at here on the left, and we see these areas in the frontal lobes and some in the temporal and parietal lobe are not talking to each other.

Well. And his salience network was dysfunctional. This is before the hyperbaric oxygen in the laser. After you can see his salience network is completely normal.

And he was say he reported you know, things aren't bothering me that much. He's able to get his work done.

Things aren't bothering me. Now, here's the amazing thing here is his CNS vital signs.

I don't know if people use that, but we get a baseline on everybody. And so here he was at age 64, in May of 2019, and his verbal memory was in the 66 percentile.

And after the treatment a year later, almost precisely a year later, he's in the 95th percentile. His composite memory went from the 55th percentile to the 82nd percentile.

He he told me, he said, my memory is my superpower. I thought he was joking. Right. So I repeated the the CNS vital signs and he was not joking. He really.

That's incredible. And so, so gratifying. Right? When the pictures that you're getting on an EEG match the patient's experience, and then you can also measure it objectively with something like CNS vital signs, that it's so fun when they all match up and it's working.

I can imagine that there's a lot of people who have questions about the laser, the hyperbaric, and then the neurofeedback. So let's dive into the laser.

We you know, many of our listeners are familiar with either the G of light or violate some of the other, ones out there that are basically these, these using photo bio modulation and red light therapy to help with mitochondrial function, typically is how we think of the mechanism working.

So is the laser you're using similar to that? How is it different? What's going on there. Yeah. So so there's you know right. There's broadly speaking there's the LEDs the light emitting diodes.

Right. And then there's lasers and the the wavelength can be the same. You know, it might be 1064, eight, ten or whatever it is. But the power, the ability to direct the laser exactly where you want it to go, and, and to deliver specifically how many joules you want to deliver, where you want to deliver.

You know that that's different, you know, so we look at really 8 or 9 different parameters in terms of how we treat. So I kind of think of it's like, I think that there's a place for the light and, you know, these other, these things, but they're, they're kind of more generic.

But they can help people. There's some question of, do they penetrate the brain? How are they working? Is it because of the non-local effect or whatever it is?

It seems like there's evidence that they're working. I think that the I would like to see studies done by third parties that are not financially invested to know that that's the case.

But let's assume that they're working, and how they're working. We don't know. But what we're doing is more targeted. So, for example, I can show you this particular case here.

This is a guy, who actually, I'll show you share my screen here. Yeah. This sounds like it's highly precise. So, you know, exactly to the region of the brain that's affected.

And when I think of laser, you know, I sometimes say I it pulls up these images of, like, a movie that's an action movie where laser is highly destructive.

And yet what you're describing is something that sounds very healing. So how do you get that healing benefit and not burn something? Great question. So first of all, we don't do a laser on anyone until we know that their brain can handle it.

So get an MRI sometimes, you know, MRI, to look at the blood vessels and make sure there's no kind of aneurysm or anything like that. So but assuming that cleared for it, you're using it.

Your controlling the heat by, how what kind of what did you use, what area that you're covering. And then sometimes and you're measuring the temperature on the skin and you're taking a break sometimes, but, generally speaking, you know, we we don't allow the skin to get, warm.

Traumatic Brain Injury and Recovery Case Studies

If the skin gets warm, we we take a break and we'll work on a different area. The, this image here that I'm that I have here, you can see this is a guy who had a paranoid schizophrenia.

I mean, I didn't really think of him that way. I thought of him as just a guy who had, you know, fears, whatever. But anyone else would probably call him a paranoid schizophrenic.

He turns out he. He told me finally, that he was having facial distortions, meaning his whole life, whenever someone looked at him, he thought they were looking at him in a demeaning way.

So we did the Q IG and we saw this left inferior frontal occipital fasciculus, this highway from the front of the brain to the back of the brain here.

That was actually, abnormal. And the rest of it, you can see most of the rest of the brain is normal, except this vertical occipital fasciculus here also.

So basically, his brain was completely normal here. And then we treated him with four treatments with the laser at this point here at the front and at the point where this track terminated in the back and his facial distortion, you can see the QG afterwards has actually that that abnormality is gone here.

It's a little bit, a little bit over hyper active a little bit. But basically the whole thing is cleared and this occipital fasciculus also cleared. And his facial distortion melted away.

He reported it. And the here's I thought, well, placebo, maybe placebo. Then he said to me, you know, and my reading speed has picked up. I thought, that's interesting.

So I went and I looked up these tracks and lo and behold, they control reading speed. So I was like, well, no, it was not a placebo. I didn't know about that. So.

Oh, so it's very, very specific. It can be very specific. It sounds. Yeah. Very, very precise. So hyperbaric. So kind of switching gears from laser to hyperbaric.

There are soft chambers, heart chambers. There's wound care for hyperbaric. There's there's different levels of pressure, different levels of oxygen concentration.

What are you using and how do you think it's working. Yeah. So I think that, hyperbaric oxygen is a great tool. We use a soft chamber. There's obviously place for, for, hard chamber.

I think that, you know, there there are many established uses for hyperbaric oxygen, right? And, you know, gas gangrene, thermal burns, you know, compartment syndrome, etc., but they're also emerging uses, and that's what we're doing.

And so what are these these these are things like traumatic brain injury. There's good data actually that TBI, even if it's an old TBI, will respond to hyperbaric oxygen, autoimmunity, Alzheimer's disease.

There's evidence for that PTSD. There are studies coming out of Israel, PTSD, Covid long Covid. And then of course, used in stroke and in sports medicine, etc.

and there's debate about seizures. Some people say it helps and some people say it hurts, etc.. So we're using what we use is a soft chamber. It's like 1.4 atmospheres and and with 100% oxygen.

But most of the benefit comes from the pressure, not the oxygen. And, and other people using heart chambers and 1.5 to 2.0 or something like that. We've had good results with, soft chambers.

And describe a little bit more about that. So it's not as much about the oxygen. You're saying that you think it's more about the pressure and there's this lymphatic like what it what exactly is going on with that pressure.

Well, so it seems like at pressures below 2.0 atmospheres you have increased superoxide dismutase, catalase, you have peroxide is home. Oxygen is one, you know, activation of these anti-inflammatory types of things.

So you have reduced oxidative stress. You also have increased zone of oxygenation. Right. And increased red blood, red blood cell flexibility and increased, zone of perfusion, let's say, and then lower intracranial pressure, increased cerebral blood flow.

There's a lot of mechanisms. Right. But it's, quite astounding I would say. Yeah. Okay. And so do you have any cases by chance where you used just hyperbaric or is it typically you're you're putting these things, you're layering them on top of each other?

I do have a case of traumatic brain injury where I use just hyperbaric. And I, I wanted to show it to you because, but I can't because I see that the patient's name is on the slide, so it's, it's I can't do it.

So I'll describe it to describe it. Yeah. We described it to you. This is a woman who had multiple head injuries, but the the one that was, most profound was a head, a frontal head injury.

And you when you look on the QED, you actually see the whole frontal brain area of the brain, but a distinct line of injury, meaning be in front of the line in the frontal lobes.

It's all blue on the chagi, meaning low activity of the surface of the brain. And there's a distinct line, like a shockwave from her injury behind that line. It's all gray.

Okay, incredible pattern we did. And she presented with, not surprising, a bipolar disorder, which was late in onset. She had a manic depressive disorder, hospitalized multiple times.

Late onset. She she was in her mid 30s. It's a very late onset for for a mood disorder. And it was a result of the injury. And why? Because the areas of the brain, the frontal lobe, the up in the orbitofrontal cortex, etc., that control your impulses and your judgment and, you know, your mood, regulation, etc.

as all damage. So 40 treatments of hyperbaric oxygen, soft chamber and we repeat repeated the QG and normal completely normal. Wow. And what was her experience like?

How had it changed? Well, we we often we do many things at once. You know, we don't do one thing and wait. So her experience is that she has not been hospitalized.

I think it's about a year and a half. But she still has hypomanic episodes or even manic episode, but we've been able to manage them with very, very low doses of medicine, very low doses.

And, and, you know, she's, getting stability back in her life, you know? Yeah. And hopefully not having to deal with the side effects of a lot of medications.

That's one of my favorite things about combining functional medicine with psychiatry is that even if we can't get away from the medications entirely, we want to use the best of both worlds.

Right? And we can we can use those medications. But sometimes at a dose where our patients don't have to suffer with the weight gain or the libido loss.

So that feeling is kind of apathy or, or numbness that might happen. If we're trying to increase doses. That's

correct. Really fun work. So okay, there's we talked about laser, we talked about hyperbaric.

And now I want to talk about neurofeedback. I think this is sort of a black box that people are, just curious about, but really don't have a good grasp of.

So tell me, like for a layman who's maybe heard the word neurofeedback but has no idea what that means, how would you describe it? Okay, the simple explanation is it's like weight training for your brain.

Okay. That's the simple explanation. You want to build up a certain muscle, you know, lift weights, you know, build up your triceps. Right. Or your biceps right.

So the way it works and the next level explanation is, again, you put that cap on your head and the cap is just kind of reading the electrical signals.

And we call which networks in the brain are overactive, which ones are underactive, and how does that correlate with your symptoms. And then we say, well, let's we want to bring you to normal, right?

So we set up a protocol that basically will do that. And the way it works is you watch a movie, you pick a movie that you want to watch. You want to watch this movie.

Oh, your brain, your, your limbic brain says, oh, this is a good movie. I want to watch this movie. And what happens is when those areas of the brain are doing what we want them to do, you get to watch the movie and when when they don't go to the degree that they don't do what you want them to do, the movie kind of goes gray and the sound goes down well very quickly.

Your unconscious brain figures this out and says, I want to watch that movie. Oh, I make figures out the pattern and it starts working to do what it's supposed to be doing.

So you actually strengthening or lowering the activity in these different pathways. Right. And it's quite remarkable. It's quite remarkable. And so that's, that's it would be something that I would look forward to, like, oh, I get to go to the doctor and watch a movie and relax.

But people might walk out of there actually feeling like they've had a workout, right? Because their brain is using energy and it's having to work really hard to keep that movie playing. Is that right?

Like, what do people, what do people describe on their way out of.

Laser Therapy, Hyperbaric Oxygen, and Neurofeedback

Yeah, I would say that, the more traumatic head injuries you've had, the more exhausting it will be. So in which case you use shorter sessions and maybe even less frequent sessions for people who haven't had that much.

It may not be that exhausting. So it's kind of depends, but usually after, you know, a few round, you know, 1 or 2 rounds, the brain is kind of picked up and it's learning what to do, and it's not so exhausting.

But for some people can be very tiring. Now, I had the privilege of interviewing and talking to, handful of experts in neurofeedback. And there are different, devices.

There's different ways to do it. There's different programs. Do you see that? There's a big difference in that spectrum of, types of neurofeedback, or do you think they're all kind of created equal?

Which one do you use? What do you recommend? Well, I would say that I'm using, Loretta 19 channel neurofeedback, which is from what I can tell, I'm not remember, I'm new to this field.

I've only been doing this for 3 or 4 years that people have been doing it for 40 years. But I actually, have been

trained by some one of the guy who I consider to be a genius, really.

And I review all my colleagues with him, and I'm learning and continuing to learn. So I think it is probably the best form of neurofeedback is the Loretta 19 child neurofeedback.

There are people in the fields. I was seeing results that are, I Heather, I can't tell you how I come home and I tell my wife, that my mind is blown, my mind is blown, and I can't believe that I haven't been doing this for my whole career because I didn't know I.

It is mind boggling. Simply mind boggling. When we know better, we do better. And I am so inspired. Every time I talk to you and think I want to be doing more of what Doctor Hood is doing in my office, because you do, you get these, you're getting consistent results.

I so appreciate how you're pushing the envelope. You're never satisfied. I think you and I share this. We're never satisfied with getting good results.

We want great results and we want them more consistently for more of our patients. And your commitment to that is is just inspirational and really, really appreciated.

What do you do for your brain? So I did a Shiji on myself actually my three years ago, I was like, oh my God, this is this is really bad. And so, you know, exercise, diet and optimizing.

I'm on thyroid hormone and optimizing my thyroid hormone. And I was able to normalize it, which was quite a relief. You know, and, so that's, that's what I do, and I, I have to say that the main thing I would say that I do really, though, which is a long process for me, is spiritual work.

That's the main thing is because, you know, we live in a society where we're raised to believe we should have control over the outcome. And, you know, we don't.

But, you know, sometimes we do. But generally, you know, if we're fortunate, you know, things go the way we would like them to go, but it doesn't always.

So my belief is that, you know, there's a plan for my life that everybody's life, there's a plan for everyone's life. And you have to just kind of learn to trust that there's a good plan, that there's all it's all good, actually.

It's all good. You just don't see it in retrospect. You can see it, and I, I could see that in my life. The things that were the hardest for me were actually turned out to be the best.

What? I like to do them again. No, no. But that attitude of acceptance, going with the flow actually allows me to be calm and much less stressed about things.

And it'll be what it'll be. Yeah, there's a physiological component to that, right? When we can accept and we have these spiritual practices that service that can reduce the stress signals that can put us at risk.

And I think hearing from you clearly a high integrity, scientifically minded physician, hearing how important that is, not only for you personally, but I'm sure you share that professionally with your patients, making sure that there's this balance across our lives, our physical, mental, emotional, spiritual lives.

I think it carries a lot of weight coming from you. Yeah, it's it's so important. It's so important. Because it's it's the fundamental thing with how we see the, you know, is our lens through which we see the world.

Right? That's the fundamental thing. That's the fundamental thing in terms of your environment is how to use your attitude if you want to call it attitude.

And that takes work. Yeah. Cultivating. Yeah. Absolutely. A lot of what you describe here takes work, right. It

requires time and effort. Like you said, it's bicep curls for your brain when you go into neurofeedback.

And so how how do you communicate with patients, when they're feeling overwhelmed or like it's too much. Yeah. So what we do, we, we tell them that they're going to feel overwhelmed and we, you know, doesn't help.

Right. But we tell them we try and screen people to see who can do this, who can't do it. We have a terrible track record with that. We're always surprised by the people who are doing what we never thought they could do and doing great.

And the people we thought were shooting, you know, they like not doing it or something. So we have coach, I have a nurse who's, you know, in every session and she's taking notes and she's communicating with them between sessions.

How's it going? Trying to remind them what to do. The staff is trying to help them. So we do everything we can possibly do. And we always try to enlist their resources, whether it's their spouse or the parent or whatever it is.

And and try to explain what the roadmap is, you know, so they know what they're in for. If they want to do it. This is going to take some time. It's going to be, you know, six months, eight months, 12 months, whatever.

It will be of hard work, you know, and I wish there was an easier way. I admire you for what you're doing with this inpatient, program, which I think is so sorely needed.

And I hope you expand it and, and bring that to more people. I really do. I think it's wonderful. Thank you so much. That's where we're hoping to do that.

And it's so validating to hear you say that because we also find that health coaches and nurses that follow up, we're working with cognitively decline patients.

And they, they it's no fault of their own, but it's part of their disease process that it's going to be harder to incorporate these more complex changes.

And so hearing that you also experienced that health coaches are very helpful. Nurses, are very helpful in having that staff to to support everyone, enlisting whoever their support system is, and really letting everybody know, setting those expectations ahead of time, that, yeah, this isn't going to be easy.

This isn't swallowing a pill and having it work the next day. This is hard work. And then the other piece that you mentioned that I also have experienced is this idea that there's like a readiness score is how some people kind of describe it.

And I do not find that very helpful. It's the people that you don't expect to nail it who do it. And then the people you think have the best set up and they just they aren't able to execute.

And so I just I like these conversations are so great because, I'll talk to people and was like, oh, you need a readiness score. You need a readiness score.

You need to evaluate if somebody is ready to do this. And then we I feel like we would lose people who get the most benefit if we, I agree with you completely.

I'll tell you one quick story of a woman, 72 year old African-American woman with aphasia, dementia. You know, and, the husband had the money and he wanted to do it, and the family wanted to do it.

And she doesn't want to change her diet, and she doesn't want to do this, and she's diabetic and other. I said, you know, listen, don't waste your time and your money.

Really. I don't think this is going to work. I really I just didn't want to put him through it, you know, he said, I said,

listen, you could lead a horse to water, but you can't make him drink.

He says, listen, I grew up on a farm, a farm, and if you lead a horse to water and doesn't want to drink, you put the hose down its mouth. I said, okay, all right, fine, I'm in.

So of course I she didn't want to do anything but so so I said, all right, look, do the sugar, let's do the laser. Let's see how it works. So literally, Heather, I sat at my desk.

I won't forget this. And I have the plan, and I know I'm going to do it, and I just pops out of my mouth. I said, God, I need a miracle. I go into the laser room.

He's there, I'm there, I'm lasering her. I don't even know because it's dark skin. Is it going to penetrate or not? Because the melons can absorb the light, I don't know.

She starts talking. She starts talking and I have tears in my eyes. And he has tears in his eyes and and, I just was astounded. I mean, just astounded.

Now she had damage and, you know, and so she didn't have full speech, but I was able after, I don't know, 10 or 12 treatments to have a 45 minute therapy session with her. Wow.

Yeah. Wow. What's after today? I, I'm inviting myself to hang out your clinic and learn from you whenever you'll have me, because you just have so many incredible insights and you're using these really amazing tools, and, I it's showing me the gaps and what we have to offer here.

And so if, if, if you'll have me, I'm going to come hang out with you and, and get this all the goal is to get this out there, hoping to write a book on it and to train people, etc., because it's got a, it's got a it's got to be utilized more, you know.

Right. I think we both share the goal of impact. We know that this can be reversed. We know this can be prevented. And so it's really just a matter of changing the story and letting everyone know that this is possible.

That's right. Thank you so much for sharing your valuable time with us, your valuable insights, and really, more than anything, the hope that everyone can have when it comes to this awful, torturous disease.

Thank you so much. Thank you. Heather. For.