Introduction to the discussion

To. Hello. Welcome to, mycotoxins, chronic illness. Today it is my pleasure to introduce and have a discussion with Sanjay Chandra. Testimony. Chandra is, has a, PhD in, in computer science and has a master's in counseling psychology.

He has, woven together eastern and Western, thought and especially in the deep spiritual traditions, in the last 20 years, he has been working with neuro biofeedback and, brain stimulation technologies.

Today we're gonna discuss, how to use these technologies in order to improve, and recover from the damage. And, after mycotoxins exposure, and especially what we see with chronic illnesses.

You know, we have much to discuss. And I've asked our team on Chandra to first give us a little overview of the main areas of his interest. Before we get going.

So in order to help that, we're going to start off, I'm going to, welcome Doctor Chandra. And I'm just. Let's see, I think you can use. Is your screen sharing working? Yeah. Yeah, yeah.

Thank you. Wonderful pleasure to be here, Eric. Let me share my screen, and we can, go from there. Okay. Let's see. We can make that work. Yeah.

Energy, frequency, and low-level stimulation

So I just wanted to give a little overview of some of the things that I'm into and their principles. So they'll provide us a basis for conversation. And so we really, talking about the role of, small amounts of energy and the, and the aspect of frequency of that energy and healing.

So the idea here is that we, we, we put in a small amount of the, in this case, electromagnetic energy, light, current magnetism into the body and the brain.

And we get out an output that we desire that we have desired states and traits that we are aiming for in the context of improving function, performance and healing.

Okay. And what I really like here is that you're showing that the energy input can be multiple forms. Yes. And it's a low level of energy input. So that's important.

Like one way that we find that this is not damaging to the system is that it's a very low amount of energy. You only need a low amount of energy if you do it at the right frequency.

That's what's interesting. You don't need to, you know, whack the system with a large amount of, like, like a big hammer. Just a small amount. Right. So here's some examples of devices that are clinically used.

And so here's infrared light shining into the skull on the left. Here's a light, stim device that's like, you know, flashes light in the eyes and plays tones is, magnetic coil device.

Here's a magnetic coil device. Here's a direct current device that can control battery, an ultrasound device, and a electrical frequency device. So here's a lot of possibilities. This is just some.

So the simplest form of doing it is to just essentially hook a battery to the brain. No frequency, just, current flows from positive to negative like you sponges, but it's controlled so it does not damage the body.

It's a very low amount of current in the order of 1,000th of an ampere. And it's very safe. There's a huge paper in 2016 by all the major people in the field.

Talking about has had been no major medical side effects, is highly noninvasive, very safe provided is used at these low levels. Right. That, here's what's interesting is that whether you add current or light, it adds literally adds energy to the system and feeds the system.

So even if you just put some current into the body of the low amount of micro amperes, you get increased ATP production, you get increased protein synthesis, you get increased amino acid transport and increased cell signaling.

And so this is from a paper by Chang on the, you know, on, the effects of current on rat skin. And it's similar in other animals as well. And we find that, the, the application of direct current to the skull, to the brain can increase both the speed of learning as well as the ceiling of learning.

So you can do it while you're doing a task and you learn better. So this is also used for, for example, the mood regulation for depression. You can place electrodes on certain locations of the head.

And there's been many studies showing good results for, for improving mood, which can be even something that can be done at home. And I've used it for over 15 years with people in supervised use at home, along with other methods, along with therapeutic methods, it can be used even for meditation.

That's being research now to calm the system. So a similar principle applies when we add light. In particular infrared light. Infrared light is very healing for the system.

And it's becoming more and more popular in various devices all around the country. And when you add infrared light to tissues, it has a number of beneficial effects.

It primarily acts on the mitochondria. Should the energy powerhouses of the cell. And it affects the the respiration chain, it's absorbed by an enzyme, said a problem C oxidase.

And that then donates electrons and helps to create ATP, which is the energy molecule in the cell. So literally it's like food. You add light and you get energy in that to operate the cell.

And it has other beneficial effects.

Infrared light and brain modulation

That whole process of creating reactive oxygen species in a beneficial amount releases nitric oxide from the cell, which is toxic to the cell, into the bloodstream, which is beneficial in the bloodstream and overall can improve waist dilation circulation, reduce inflammation, and improve positive cell signaling that protects the cell.

So these functions of repairing, restoring, and enhancing the cells by certain frequencies of light. Infrared light can be used to heal various tissues in the body.

It. And yeah. Just what what what? Let me just have you, sound different frequencies of light for different tissues or. Yeah. So that the, the other way we put, there's two frequencies here that are involved.

One is the frequency of the light, and the other is if you pulse the light at certain frequencies, so it goes on and off like five, ten second, ten times a second, 20 times, 40 times a second.

That's. So there's two different frequencies. The basic frequency of the light is a narrow range because only a narrow range of light. I didn't have put in that slide here.

Narrow range of light. Really penetrates the tissues. And so if the wavelength is too large, then, you know, then it

doesn't penetrate deep enough. So, so you use that certain range.

But beyond that then you have other effects from pulsing the light. So you get two different kinds of things. Right. And this is mostly, a red light or.

Yeah. So it's a it's a near infrared light. Right. And yeah. Okay, okay. And then similarly you can post the current in different frequencies with different shapes and they'll have different effects in the body.

So huge field unexplored really is to what these different current frequencies and what locations and what shapes to use. So certainly you can change the way the brain functions with this by directly applying the light of the current to the brain.

And so we know that the brain produces operates as an electrical machine as well. The different range of frequencies known as delta, theta, alpha, beta and gamma.

And and when you do biofeedback with the brain, you can change the, the amount of of any particular frequency which changes brain function. And performance.

Or if you apply current, you can also change the frequency, the major frequencies in the brain or if you apply pulsed light. So we're going to talk about that. Now.

Yeah okay. It seems like there's a a huge I mean the possibilities of, of of this modality, I mean, just are just amazing. You can change them so many different ways.

Yeah, exactly. So I hey. Yeah, it's like a frontier science, really. It's like a frontier. Yeah, exactly. So, for example, you know, if you pulse infrared, it will entrain the brain into certain frequencies.

So if your pulse, it's 40 times a second and you get an increase at 40 times a second, but also at ten and 25%, ten, you get an increase at ten, a large increase of ten, but also some increase is higher than ten.

So this is, a study done by a company that I work the the light that makes this kind of a headset that pulses infrared light, LEDs into the brain and into the nose.

So they showed that yes, indeed, you can do that. So that's a light device that I've used for over a decade in my practice to help people heal from brain injuries and to improve performance and to deal with cognitive decline due to various reasons like aging.

And it's very simple. You just pulse infrared light into the brain, and where we can talk about what frequencies we might use. So we see the the major therapeutic effects of these modalities for example, depression for tDCS and for the bio modulation, which is another term for using infrared light to modulate, function in the body.

For cognitive performance. And they can be supervised hot use. And so here's an interesting study that came out just a few years ago. And this was in 2016.

And MIT and MIT lab, they pulsed the the actual fluorescent lights on these Alzheimer model mice. So these mice are bred to have Alzheimer's. And if you pulse their cage light at 40Hz, you you find out that you can activate the microglia in the brain as well as reduce plaque.

So you start to improve the you start to to move towards a cure of Alzheimer's or at least reduce the load of the Alzheimer's. Well, 14 yeah, 20Hz seems to be a very interesting number.

Yeah. Because it's not other you know, other frequencies did not work. Only 40Hz worked. Yeah. No, but we see it in. And what are you going to be talking about.

Oh we see later when I talk about frequency specific microcurrent it's the same number that reduces inflammation

in the body. And that's what we talk about. Right.

And chronic disease is it's all about inflammation. Yes. And so interestingly enough that's what they found particularly in the visual cortex which that light affected.

There was a decrease in the in the plaque. So the we like company has been using these 40Hz flickering headsets for a long time now. And selling them especially because they have a very good profile.

No, there's no side effects. They can be sold to consumers and you can buy them right now. You can buy a headset that flickers at 40Hz and use it on your head.

And the infrared light frequency is 810 nanometers, which is like a good frequency for penetrating the tissues in the skull. So believe it or not, you like your hair.

A skull is pervious to like, light gets in there. Like, right now as you're sitting in the room, lights getting into your skull. And, and so we call that transcranial photodiode modulation.

It's not a large amount, but it's enough to make a difference in your functioning. Yes. So currently they actually have clinical trials going on for Alzheimer's disease and the FDA looking for FDA approval.

And here's an example of other results. For example, PTSD, they showed that using this device after 12 weeks, the cognition scores improved in the photodiode modulation group but declined in the usual care group.

And so based studies are going on about this, and I have been using it in my clinical practice for over ten years with good results with people. And this is something I said we will be talking about at the end.

A lot is just how this relates to the, either the sometimes damage or sometimes just have it patterns of what? Of the, brain fog that develops after chronic illness.

And Michael talks and exposure. So exactly. So that's one really good use for to deal with issues like brain fog. And so studies show that both current and light modulation can improve speed and saving of learning and can be added to other interventions.

So his example of a more of an experimental version that I've been using for, a study on meditation to improve meditation states, and this one, the this the particular aspect of this one, which will become available soon is that it can go up to very high frequencies which are connected with higher, higher states of consciousness.

So I'm not going to go into details on that right now. But that's a really fun thing that I'm doing. Yes, yes. And here's another company I'm working with and this, startup that's going to come out with, special kind of headset device with headphones and built in LEDs and electrodes to pick up your EEG so you can train your brain with biofeedback on the EEG, otherwise called neuro feedback, as well as it will support your brain functioning and your training with flashing LEDs and provide you feedback through the ears and through your iPhone app will device, which also will help you to do biofeedback on your heart rate. So, so let me go ahead and talk a little bit about, how about if you applied pulse electrical current to the body and to the brain?

And for that I'm going to refer to this system called frequency specific microcurrent, which is being talked back here, and Makemake. And she has a book out called The Resonance Effect.

And what I like about the system is that it's highly evidence based. It's clinical, evidence based. There's not a lot of studies on it, which is an issue in the whole field.

Frequency-specific microcurrent and fibromyalgia

But we have a lot of clinical evidence that we find repeatable results when we use this, is the system and it's nonproprietary knowledge base. Anybody can learn it, try it, test it out for yourself.

And we have a big, group of clinicians that use it together and share outcomes and results and strategies. Yeah, we have been using FSM in the office.

I took the first course with her, I think, in 2006 or 7. And so, yeah, it's been a big part of our practice and we have been yeah, just just amazed, by the results, you know, of this, multiple, multiple aspects of, of healing and allowing the body to find its, its center again.

You know, it's so much about, you know, we get thrown off by life stresses and by illnesses, and it's just getting back to your, to your balance point.

Very, very, very powerful device. Yeah. Well said. I think that one of the things that it's, what I'm going to talk about more also just what you said is how how this kind of system can reset tissue functioning back to normal after trauma of any kind.

Physical, emotional. Yeah. Yes. Yeah. And this is so what this system does is to actually use two waves, two waves that interfere together to produce some very specific results.

So this list called the Van Gelder List after, physician Van Gelder, who was the one that introduced Cera to this. And and it has two frequencies that are used together and one frequency is called the condition frequency, which has certain effects on all tissues.

For example, 40Hz is a frequency that is used in the system to reduce inflammation anywhere in the body. Once again, as you said earlier, 40Hz shows up even in completely independently from anything that the MIT people knew about or did.

This is being used already for decades in this not so well-known system, and nine hertz is used to reduce allergy. 13Hz can help to dissolve scarring in the tissue, 970 to release emotion, and so on.

And then you have certain frequencies that help to select for certain tissues. So like ten hertz selects the spinal cord, 116Hz selects the immune system and so on.

So for example, 40 and ten together reduce inflammation in the spinal cord. Quite specific 13 in 142 together reduce scarring in the fascia. So it would be quite useful you might think.

And so just quick go to and the power of the system. So one of the best, little clinical studies on this is her, Carolyn's work on the frequencies specific for use of frequency spectrum.

Microcurrent for fibromyalgia. So the typical fibromyalgia pattern of soreness in the body. And if you apply the current two channels of it, you can apply it using bed towels or pads on the hands and feet and tense pads.

And in her work with fibromyalgia patients, she had, she worked with 54 patients over a number of years and they were all chronic, had gone to all sorts of practitioners and had not felt better. So.

So anywhere from 1 to 50 years of chronicity, she had blood sample data of six patients analyzed by major scientists at NIH and as well as a control patient.

And all these patients had the characteristic pain pattern of fibromyalgia, with an average pain score of 7.3 out of ten. That's quite a bit. They were resistant to narcotic medication.

So then she found that she could use FSM to treat them. But only one frequency combination reduced the pain and that was 40 in 10 reducing inflammation in the spinal cord.

And she had begun to understand that this was partly because there's a whole subset of major, niche in fibromyalgia, which has to do with cervical trauma when semicolon trauma happens in this inflammation in the spinal cord, then later on turns into fibromyalgia.

And that's why this frequency said reducing inflammation in the spinal cord is particularly effective for that condition. All 54 of these patients experience pain relief.

I mean, that's pretty awesome result. The pain went down from an average of 7.3 or 7.4 to 1.3 in 90 minutes of treating with the machine, and it lasted anywhere from two hours to two weeks.

So in the pain would come back. Then you repeat the treatment and if you keep repeating it, 58% experienced complete resolution of five manageable within four months.

So these are not, you know, these are not small results given that it's such an intractable condition. Yes. And just just as an aside here, one of the the people who will be listening to the, the the whole summit will find that, that this is a thing that I'm especially interested in, that the cervical spine, the lower brainstem in the cervical spine and minor injury and minor instability, just small changes in blood flow or lymph drainage from those areas have profound effects.

People who have chronic illness, I mean, it's like that area seems to be, one of the lynchpins, if you will, to decide whether, you're going to have an illness and to have complete resolution or have a problem and have chronic issues afterwards.

And it's something that, you know, because this is that area is the domain of the neurologists, of neurologists. It's been very hard to, get it out into the world because, a lot of chiropractors, of course, have been well aware of this, but medical people in general have ignored because these changes are happening at the microscopic level.

Often the the vascular, there's a little pressure on the vessels, on the vasculature, on the lymph system. And so this constant inflammation and then once it gets going, oh, we don't have to we don't have a lot of tools to help.

But the neuro biofeedback world is one of those tools that I think is going to help. Let us get in. And, you know, we all know that, you know, the meditation meditation helps.

But for many times when this is fully going, we're going to need to augment that. And that's something else that, hopefully we'll get to chat about more.

But I just wanted to bring that again. Is that the brainstem and cervical spine is a critical area to why people have persistent illness, why the body doesn't go back to the ground state of health is because it's getting information that there's constant there's persistent danger even after you've dealt with the infection or even removed the mycotoxins.

And sometimes you're not back 100%. You're still very sensitive because this area and, so go on. But but and all the talking about are ways to realize that you see this in all kinds of illnesses.

Yeah, yeah. That also explains why when we treat people with this protocol, no matter what illness they have, we have results just improve. You know, even if they don't have fibromyalgia, we just add this in.

Right? Because it's it's it just seems to deeply relax the body. And as you said probably affect that. So danger response. That is great healing. Healing is what you know we count on what happens.

The difference between chronic disease and acute disease is in acute disease. The body goes through the healing processes and you get to the other side in chronic disease, you start the healing process, and somewhere along the way you get stuck.

And you know that stop point off takes on a life of its own. Even the the original insult can be gone. And that that's where we often forget we we in medicine.

We focus on this though the if you fix the original insult, then voila, you're going to get better. And that is true. It's the original insult is something that is that the body can heal from know it's not overwhelming the body.

So when the body is overwhelmed. Yeah. Right. So anyway, and so and one of the important things is that the inflammation markers, as you're showing once they stay up, they tend to be a self-perpetuating loop.

And it often takes a little outside energy. And I'll let you take over from here, begin to, to, to rebalance us to reboot the system. Is that. Yeah. That's well said.

So yeah. So as an example of inflammation Mark. Interleukin one, the levels were very high in these patients and they dropped on an average from between 92 to 21.

That's like 18 to 20 times in a 90 minute session. You know, that's even pharmaceuticals don't do that so effectively. Yes. And so you also had an increase in endorphins, which was consistent and over a 900% increase in endorphins.

We call it the smoosh effect because you can just see the patient just totally relaxing and zoning out. It's very obvious. Obvious. Yeah. And this happens a lot with even with other treatments in the system.

So let's talk about specifically the role of frequencies. And we'll stay in the context of the system. But it also applies to using pulsed light. So if for some and inflammation.

So we see that 40Hz. And when 16Hz turns inflammation off and the immune system. So which is significant for all the other immune diseases that are you know we constantly are dealing with these days and 40Hz frequency for any tissue turns inflammation off in that tissue even in the presence of bacterial signals.

So it's a highly reliable medical signal. And certainly more research is needed to totally confirm this. When we see this clinically all the time. So within minutes you can start to turn inflammation off in the body.

And of course, if you actually have an infection and you're turning inflammation off, then you got to treat the body with antibiotics or something. We know that medicine, but it's so reliable that you can sometimes diagnose an infection.

If you've been treating a person for inflammation in a tissue and suddenly they get worse. Yeah. And this is why we have seen this. Absolutely. I mean, especially because it's it's very, very good to use FSM for inflammation after surgery because when you have a sterile injury, the inflammatory response in the body that we call the CDR one, that first step in cell danger response is, is not very helpful for for healing if it stays going.

So if we can shut that down quickly, you'll heal much, much, much faster. But on the other hand, if there was a break in sterile technique in that surgery, if there was some introduction of bacteria especially we see this in dental things, you know, then if you run these currents, you'll see the infection flare and we'll have to stop the 40.

And I said, and treat with antibiotics, it's, it is one of those things that that just I'd like more doctors to be aware of that, that this is not magic.

We are we are dealing directly with the basic forces of how the body works. And it's just a shame that, we can't get them to look at the, evidence, you know, or that we can find even better studies.

You know, that to all of it. Really? Right? Right, right. Well, it's hard to fund these. It's hard to fund goods. People. People just do not understand how expensive a good study is, right? Right.

Yeah. It's. And it's not a pill that you're going to take forever. So you know and and so yeah. So then the question from our perspective really is that we know it's effective.

How is this so effective. And you know it's really is going to be part of the medicine of the future. So let's just very briefly let's go look at the inflammation response and how this interferes with it.

Inflammation, chronic illness, and healing mechanisms

So that's the theory anyway. So let's say there's a tissue injury or an infection. The the the injured tissue signals the blood to actually bring forth and the immune system to bring forth, cells like macrophages to start to clean up process, which then secrete cytokines.

And, these proteins then initiate a phase, a pro inflammation phase to deal with the infection in the injury and to start degrading the tissue matrix.

And then later there will be a buildup phase to finish the healing. But this is the initial phase. And the way they do that is by signaling the cells in the region.

So they change the cell signaling, which turns on certain genes inside the cells, which secretes more cytokines, which are pro inflammation, cytokines like that.

And so it's actually the changes of cell signaling due to an infection or injury that change the genetic expression inside the cell, which turns on the genes that create inflammation proteins.

Right. So this is a picture of a cell. We have the membrane receptors that are significant in cell signaling let's say pictured here. Then these cytokines like L1 or tumor necrosis factor alpha will act like keys physical keys.

And they will signal the cell and to and which will that signal will be translated into other proteins such as kinases and messenger RNA to actually convince the DNA to signal the DNA to produce inflammatory cytokines, which are then secreted.

So that's how we understand it as a chemical level. Now, the theory is that the way this system, the FSM kind of system works, when frequencies work, electromagnetic frequencies work is that they act like a wireless signal.

So we have the same cell, but instead of a physical key you have a wireless key. So somehow the wireless signal will turn on and turn off the membrane receptor.

And we I'm also going to look into how that can happen. But that's, that's that's what's happening here that we think as far as we know, when one of these days, Sanjay, we I think we're going to have a conversation with you, me and Jerry part doctor Pollack.

Yes. Right. I think because I, you know, this is happening through the water, the water resonance. Yeah. I agree and and and the change and the change in proteins, the three dimensional change in protein structure with just that to change in energy.

But anyway, that's it. That, that that's another fascinating. Yeah, that's a whole other facet. But you know, because the water structure is electrically charged and and the thing is that the whole body is not really just a chemical device, it's an electrical device.

And yes. And so actually, I'll talk about that in a moment. We'll have another chance to discuss it as well. But that's a good point. So, so in chronic pain in autoimmune conditions and chronic illness we have circulatory inflammation.

You know circulating inflammatory proteins. These frequencies reduce inflammation. Proteins and stops them in the normal range. It doesn't take them below normal.

That's what's interesting. So so so if you take, you know, something like Humira and other medical interventions, those chemicals will keep reducing inflammation below normal range depending on your dosage and frequency.

And so on. But this is this is not that kind of intervention. It's actually affecting the cell to regulate itself by turning off the genes that it got turned off right.

So so in general, if you're just doing this kind of treatments, there's no risk of just getting random infections or cancer because your, your, your inflammation system is damaged or hobbled by the, by the, by, you know, by the

medicine you're taking.

Right? I mean, this is the beauty of. Yeah, I mean, it's modulation. You're giving the body the option of response. I think that's the big difference between, most of the remedies, like, you know, herbals at, at appropriate doses and drugs is that the herbs often give the body just like the electrical treatments to and the energetic treatments, the option of response.

The it's not a hammer. You know, drugs tend to act like hammers. They go in there and they do something no matter what the milieu is. Yeah. You know, and, that is beautiful.

It's beautiful. So another, look at how frequencies might work. Well, turns out that chemistry is actually a shorthand for, electromagnetic interaction. So.

So that's how that's really the real science. I mean, all chemical bonds are electromagnetic in nature. So when when you have a molecule or two atoms, the atoms are held together electromagnetically through electromagnetic forces.

So we have ionic bonds, etc., covalent bonds. And chemistry involves making and breaking bonds. So when you actually have any reaction chemical reactions you have breaking bonds and you're making new bonds.

And these reactions are actually fundamentally electromagnetic in nature. So every bond has a resonant frequency. And if you apply frequency that somehow connects to that resonant frequency, then you can actually break the bond with a very low level of energy.

Just like when you use enzymes, you can speed up chemical reactions, you know, to, to a usable amount. Similarly, when you apply resonant frequencies or frequencies that are related to resonant frequencies, you can speed up chemical reactions or you can make new reactions happen.

Right? I think that the most traumatic event is the old, you know, right. Note in the glass cracks. Yeah. Exactly. Right there. Yeah. Right. Okay. Yeah.

You know, you have a small energy input and a big shift in the background or, you know, the Tacoma Narrows Bridge, you know, falling into the river because of the frequency of the wind or, you know, some more current research from 2011 by Anthony Holland up in Canada, where he used a plasma EMF device to break up cancer cells in the Petri dish and showed that if he uses these electromagnetic frequencies at a particular base frequency, along with another frequency which is the 11th harmonic, then he could start to destroy these cancer cells.

You can see these slides. The cell here is breaking apart in the fourth slide, by the applications of this particular set of electromagnetic frequencies in the range of 100kHz to 300kHz.

And the next one being times 11. Well, and so we have the frequency scarring, the 13Hz, which actually seems to reliably and a wide range of instances start to dissolve cross-linked bonds between cells and is used in the system for adhesions to dissolve divisions in the body.

And so they're not used five weeks after a fresh injury because they would actually inhibit healing. Right, right. And so here we have, you know, wireless signaling that is actually operating at, at the level of affecting the electromagnetic bonds and in the, in the membrane receptor proteins and signaling the cell.

And so that also, you know, shows us that, yes, we are affected by electromagnetic frequencies more than we realize. And this sort of this society has been kind of ignoring the fact, and we can use them both for healing and be harmed by them and needs to be looked at.

Yes, that's that's another subject that we'll be delving into sometimes. Yeah. All right. So as you were talking about your friend, Jerry's work, right, is, talking about how water is actually structured and large.

We can go into a deep dive on that and that we have wired, like channels in the cell aquaporins through which water molecules travel. And we can actually view the cell itself as a liquid crystal.

And this is a whole new way viewpoint of how the body functions and of how healing can happen in the system. The new paradigm maybe is not that new, but it's it's new enough in the point of view that we need to switch over to that as well.

Yeah. You know, I mean, again, a lot of these paradigms have been with us for a long time and they've been on the back shelf. They've been hidden, you know, the main the main concept that that most even scientists work with, they still think of the cell as this bag of liquid.

Right. And rather that it's more like a crystal, a gel, you know. Yes. But but and that, you know, like that you would think they would have figured that out, considering how many micro holes they can make in cells and stuff doesn't leak out like, so now coming down to a key issue in healing, basically, is that when there's trauma of any kind, physical, emotional, chemical, then that affects, of course, the membrane receptors and cell signaling and modifies the genes and cell function.

And, not so beneficial way. And then let's say you remove the insult, the incident is gone, the chemical is gone, but the body has not necessarily recovered, especially as like you said earlier, if it's overwhelmed.

And so the cell memory is maintained. And so the body is now not functioning well. And then that gets worse. It becomes a negative cycle. And and so what we want to do is to add a small amount, so energy to the system that first gives the system more energy because it has less energy.

So functioning optimally, if it was optimal, it would have more of natural energy in its respiration change in the mitochondrial function. And so on. So we give it that little bit of energy.

So it starts to amp up. Its it's functioning. And then frequencies that direct that energy towards resetting it back to its equilibrium previous equilibrium state. Yes.

And so we think these frequencies turn these membrane receptors on and off, and they modify cell function back to normal. And when we can do that successfully, then we can reverse the course of chronic illness.

Yeah. You know, this is you know, again it's just so important to always be fluid in how we look at living systems. You know. And what happens is unfortunately in medicine is that most of the focus has been on the chemicals.

With the biochemicals we can measure the cytokines and and what and we keep looking for this linear relationship with them to find the, the elevated cytokine that we can lower, that's going to make the bring the system back.

And that doesn't seem to happen because in reality, it looks like to go from the different states because, you know, when, Doctor Novio, who I'll refer to often throughout these talks, is, he, he has broken down healing into, three steps, sickle cell danger response one, two and three.

But basically the big black box in it is what gets the system to shift from one level to the X from the acute injury response, which is the cell danger one, to the rebuilding tissue response to two, and to then to the Re, then to the re integrating the the the rebuilt cell into the system, because it has to learn how to communicate with the cells around us.

And that's like CPR three, but it should go from each one of these steps. To fully integrated into the body requires a change in milieu. So it's almost like there's a quorum sensing event, you know, where like it's not just one chemical, but it's multiple chemicals.

But that's from the chemical viewpoint. But if we look at it from the frequency, we can probably find more elegant ways of shifting it because it is at the end of the day, it's probably a shift in the frequency that the cell is, is, listening to or hearing.

Right. That shifts the message, you know, and the the chemicals are are the, are the signs. Not necessarily are the signposts that that's happening, but not necessarily the causes.

It's more likely it's a more electrical, event. Yeah, actually, the body is more fundamentally electromagnetic in nature. And that's why we haven't, focused on and realized.

Yes. Yeah. And this is what I, it's, you know, to me, it's always, it's it's it's always exciting because I said I came, you know, my background was from what I call regular medicine, which looked at things in like, you know, A causes B, and we're going to figure out the cause of the disease.

And then, and then we're going to be able to treat the disease. But when we have, you know, the end result, by the time people have a micro toxin exposure and have you have developed illness from that exposure, they have usually had multiple insults that have got their immune system to no longer be able to to deal with the micro toxin or even to remove the micro toxin.

And they're not back 100%. It's because, as you were saying before, the cell has the cell or the organ that's involved or part of the organ that's involved has is now resonating in a different place.

And. Right, exactly. It needs information. And that is what, I really love about the Bios, the all the various techniques and, and that you, that you use is it it really isn't important anymore.

What caused it? I mean, that is our mindset that we have. It's the cause. But the cause is often gone. And what you're offering is a way to just play the song that will allow the healing, you know?

Yeah, exactly. So it's really, you know, that we want to be able to. Okay. Yeah. We direct select the select the tissues that are most affected, maybe the whole body if it's, you know, we could work on the whole milieu of the body.

We can our more specifically select the tissues that are most affected and start to give them information and energy that then starts to redirect that, their functioning.

And I have used this with, a lot because I work also with the brain and mood, with different mood disorders and brain injuries and cognitive function.

And when combined with certain supplements and this light and frequencies, we can start to get really great results, you know, really, really improvement in people's, functioning.

And so yeah, that's I think that's similar pattern applies to when there's toxicity in the system is that we want to support the, the functioning of the tissues to come back to its original state and to be able to deal with this daily stressors.

Yeah. Yeah. And that that is is what is you know, one of the great issues is the order of therapy, you know, I mean, like they say, you can see it in things like osteopathy, you know, like you can, you know, what order you treat.

The imbalance can often determine how successful you are. You know, even though there can be four places in the body that that things are off if you treat them in the wrong order, you often don't get, as good a response.

And, you know what? What? We need a lot of work in is what order to use these therapies. You know when to start. And I'm wondering if you can have you had any experience yet or just or glimmers of ideas like when you use the Q EEG, to begin to get like, you know, where to start, you know, do you ever see something that looks just so toxic that no.

Any more energy, isn't it? Yeah, exactly. You know, I think that's that's really lot to learn there. I don't I just a few starting points. Right. So it depends on the presentation.

QEEG-guided neurofeedback and treatment planning

So for example the brain function I will often start with the Q EEG which is a quadrant avg in 19 channel EEG recording that we then look at to see, well how is the brain doing relative to an average brain of that age and how the deficits in the functioning are showing up in various parts of the brain and what it's doing in terms of the signal and so, so certain things, you know, will become apparent.

For example, if there's more metabolic issues, then the brain may not have enough energy, so it's too slow or the the amplitude of the EEG is too low, then I know that if I'm doing biofeedback, the brain just doesn't have enough metabolic energy. Then I'm not going to get anywhere.

You know, it's like first we need to deal with that. So then the question comes, okay, let's feed it some energy. You can give it appropriate, mitochondrial health is so important.

Again, something new that we're realizing so we can feed in mitochondrial supplements. We can feed it light, which is. You know what I'll do? We can feed it some direct current.

If it's a certainly if mood is an issue and say, okay, well that should help. On the other hand, if there's still ongoing toxicity, not just the memory of it, then even that's not going to be as helpful.

Then you may have to detox the person. So we have to look at the whole picture. Or if we try something and it's not working, then we go back to the drawing board and look.

But that's what I love about a practice like yours, is you have yourself looking at the whole picture, as in other practitioners, as part of the practice, like me and others, that you're going to look at the whole profile and say, okay, where should we start?

Because we see, right? And you can say more about this than I, but, you know, then where do I see in the whole picture there is a problem. You they a heavy metal toxicity is the other inflammation markers or other deficiencies that we should address.

Then we can start on retraining the system. Yeah. No it that is always it. When when the system has you know, the system the patient has been ill for a while.

You don't, you know, figuring out what's on top, what what level needs to be treated. You know, if I was called it three dimensional, you know, it's like pick up sticks.

You know, you remove one and it might be the one that you really need to take, but if it's not on top, it might disturb the rest too much. Other things. Yeah.

And then you wind up with problems and it's it I mean this is always been the issue when people call me what what is the protocol, you know. Well the protocol, if you're if you were healthy and you had, you know, you have Lyme disease, we can give you herbs or antibiotics, right?

You know, just pick what you want. It's going to work usually, you know, but if you've been sick for ten years, you, you know, complicated you accumulated so many compensations that each compensation has to be spoken to a little bit.

And, but again, the beauty of using the light and the frequencies is that accepting the supersensitive the downside is very small. And even in the super sensitive, if you go gently, you're not going to do too much, you know, like you're generally only going to get positive results.

You know, I, I always, like to point out that, you know, years ago when I first learned the FSM, in the old days, people really thought you could do no harm.

You know, it would be. And you really can't do harm. But if people who are super sensitive, just like any electrical problem, off balance, you can throw them off balance.

You know, luckily, it's a transient balance, you know, off balance, but but everything has to be used, with consideration of the individual. Individual. Yeah, totally.

All depends. But the but the idea that that we can now, begin to use light and sound and electrical and low and the micro amperage current to begin to lift the brain fog that sometimes is so persistent, you know, despite the return of what looks like fairly normal energy.

But the, the self defense pattern is just stuck. And, you know, I, I'm just so impressed. What, the various I mean, the modalities and I think that's what's so much fun of working with you is because you have more than one to dance with.

Yeah, yeah. And we do get good results with brain fog. Absolutely. And then another thing that I can do, depending on how, you know, how a person is working with me, is to also address the more psychological and spiritual factors depending on, on, you know, what they are open to.

And, what I see is happening. So for example, one, one skill of having any kind of trauma, whether it's toxicity or other kinds for a long time, is the idea of learned helplessness.

So that's actually the psychological aspect of the cell. Danger response is learned helplessness. So the the body is, learned that it's trying to it doesn't have enough energy and it's trying to get things done or it's even trying to get help and nothing seems to be working for a while.

You know, it's been a year or two years or six years. And so then there's a certain circuits that fire the built in. And the idea is that it's not going to work.

You know, certain built in feelings of helplessness and hopelessness arise quite naturally. I mean, this is not wrong thinking. It's going to happen. Those feelings are going to come.

It's a normal response to the situation. And then as we identify with it, then, this becomes this habitual identity with this, and it literally causes the system to stick where it is.

It becomes a homeostasis. I know that very well in my own life, because I've had a number of issues in the past of chronic illness as well as depression.

And it was until I really realized these various factors. So I used a lot of these modalities in myself. But I also work with this whole factor of learned helplessness that I really, when I could start to see it and step out of it then and realize that that itself is like a supporting factor that keeps the system locked in a state of dysfunction.

Yes. The body. The body learns, and we often we learn. Yeah, yeah, yeah. You know, and we we we we beat ourselves or the people around us will beat us up on your situation.

And it's it is part of what? Of how the body, you know, slowing down and not moving is a survival mechanism. Right? Okay. And once it gets hooked into your system, it's not an easy one to undo.

And you know, and again and we are wired differently. There are what I call the warriors, the you know, the athletes, the people who, who, who you know, chronic illness is probably hardest for them because those are people who have always been willing, willing and able to overcome physical adversity by will.

Right. You know, doesn't matter how hurt they are, they, you know, feel of that body. They just manage to push through, push through. Yes. And, you know, I mean, some of us, I always say my attitude towards, you know, extreme exercise is when's lunch, you know, and then other people, it's like, oh, keep going.

And, you know, but no matter what the personality structure is that if you've been ill long enough. Yeah. The, the, the the response in your body is to be fatigued and be unable to.

Yeah. So, so besides the natural fatigue in the body, there's the learned fatigue you know, and helplessness hopelessness which is just learned in the system.

And it's not your fault or nobody's fault. It just it it's a natural learning in the system. And and actually I had to develop, I developed, special techniques to really deal with that.

You know, we have some techniques in the trauma therapy world which are good. And I came up with some of my own as well to really because it's such a key factor to, to, to reboot that, that, that, tendons because people have to understand just like the, you know, when you get a cold and you're fatigued, that's the body's response.

It's not, you know, it's not a willful action. And yeah, ill for a while inability to, think clearly or inability to believe that things are going to be different after years of them being the same is, is a very, very difficult, switch to, to flip.

And I'm just glad that that, you know, people have been developing this and exploring this. There are so many there are so many ways that, people are beginning to reach out to each other and, and restore hope in, in the body's ability to heal.

And so what is one way we can do that is by seeing, you know, some examples of people who have getting better. I mean, we do it at all these different levels by looking at it empirically and using some techniques to help the body to come out of that response, as well as just what we were talking about earlier, of feeding the body enough energy to get moving and then giving it the information to move in the right direction that also get you out of that helplessness. Yeah.

And that's what's so exciting about the neuro biofeedback devices if you use them. So I we went running at a time, but one of the things we didn't get to talk about that I'd love to just touch on is, a little bit more about how the Q EEG because I, you said it, but it was, you know, like many times it's something that you're so aware of.

It seems like, you know, obvious. But how you use the q g to let you know, you know, what are the signals that, you know, a system needs more energy or a signal or that it needs more direction in, in type of frequency, say a little bit more about.

Yeah, yeah, let's use that. Okay. Let me say more about that. So the basically what we do is we do an EEG recording and then we'll, we'll, we'll, we'll get a map of the brain and then this map out.

Let's see if I can share this here. Okay. One second. I just, Yeah. No. You're fine. Yes. No, no, I I I'm just thinking. Oh, here we go. Yeah. So here it is.

So for you to just give you a very simple example. So this is like a kind of a map that we will get by doing a 19 channel recording and then analyzing the data.

And and in this case it's actually compared with the database of information. And so the here we have so these colors represented, you know, high deviations from the average.

So let's see. So for example you have this red color and this orange color that shows that this person has high activity in the center of the brain. Oh wait let me turn this off here.

All right. Okay. So. So, so this is a person who had some obsessive compulsive disorder. And one of the ways it shows up in the brain is an overactivity in the central cingulate.

And it's also affected by the, the underlying the emotional areas of the brain. And so we have this over activity that we see. And then we see okay. So we recognize this over activity.

We recognize that this kind of over activity is coming from the central cingulate in the limbic region. And what can we do in terms of, biofeedback or stimulation to reduce this activity, which will presumably help the symptoms of anxiety and OCD.

So what we might do, for example, is we first we correlate these symptoms with this abnormality of the GI. Then, for example, we might place a negative electrode, a DC current here and the negative electrodes depressives activity in that area.

And we find that, you know, over regular use that that supports the therapeutic work of reducing the anxiety and the overthinking in the brain.

Learned helplessness, brain fog, and closing reflections

And, or we might put a, EEG electrode here and do biofeedback and play some games with the brain to help the brain to train, to train that EEG down. So you get rewarded for bringing the the EEG down in that area.

And so the brain learns to not be overactive in that range. Right. What? One of the things I like to point out to people is that, you know, we see marked increases in OCD.

You know, that obsessive compulsive behaviors and anxiety in our patients, especially with Michael toxin responses. And it's it's just part of the immune response, the inflammation in the brain sets this off.

You know, interest of the protein cells. Are the thing or the parts of the brain that kind of help restrain us. And they are the most sensitive to, to to both physical and toxic insults.

And so we reduce the amount of gab of the amount of quieting energy we have when we have these exposures. I mean, that's what I, I think I just want to re-emphasize that so much of the emotional, excesses that we see in chronic illness have to do with these, direct effects of the body trying to protect itself, you know?

Okay. Yeah. So it has this strong metabolic kind of basis. Yeah. Yeah. And that these are, you know, we all have tended what I call them, various neurotic tendencies.

I mean, there's no I've never met a normal person yet. And it's just the and one's work. And when the, when there's inflammation that's going to unmask how your body compensates to protect itself.

Okay. And, obsessive compulsive behaviors and anxiety are just an extreme behavior of self-protection. Unfortunately, it's not a very effective one. For chronic illness, but it's, you know, that those are the things the body has to pick from.

But anyways, we have to wrap up it. It's been that this is just been a lot of fun, Sanjay, to go over these, various, amazing modalities that, I think if we could get these into mainstream, mainstream use, but probably before we even get there, we just have to get enough.

I said enough data points. I mean, there is. The thing is, there's not enough people like you out there who are using more than one of these devices. And I think it's important for people to get the flavors of what device, for what person.

You know, for what issues. And, yes, I, I look forward to, your work over the next few years and hopefully we can actually be collect some of that data and, and help, help support.

That sounds good to me. It's been a pleasure, a pleasure. Thank you so much. Okay. Bye. Bye. Bye.