How Inflammation, Mold, and PANS/PANDAS Affect Brain Networks Transcript

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Introduction to the webinar and podcast

So I like to talk to a person to see how they're speaking. And I'd like the see the words that are kind of coming out. So when I'm listening to what a, what the person is saying, I am listening what it means, whether there's some of the thematic meanings, and then I also mapping it on to some the networks that coming from.

Why that matters is As much as sometimes I might want to go and just tweak these sort of networks, a person also has to be ready for them to get tweaked.

Let's go back to default mode. If somebody's living in a certain narrative, whether it's right or wrong, helpful or not, they have to really be really ready to switch out of that narrative.

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Dr. Chris Winfreyu2019s background in neuropsychiatry

Well, welcome everybody to the Maps Healing Tomorrow's Future podcast. Today, my guest is Dr. Chris Winfrey. And Chris, thanks for being on the podcast here today.

Why don't you introduce yourself to our audience, if you could. My name is Dr. Chris Winfrey, and I've been practicing neuropsychiatry for about six years in this function integrative space.

I started out as a conventional psychiatrist in 2011. And then I start emerging into this sort of space, realizing that there was a lot more to this puzzle than what I had been taught originally.

So that's how I starting moving into the space of running into some plateaus with some patients. Now I'm here. Right. Awesome. Well, you gave an excellent lecture yesterday and just want to cover a few of the basics and then we can launch into sort of what you're doing with your practice.

And I wanted to start with this concept of a default mode network. I mean, a people have been mentioning that this weekend and I'm not sure it's a term that a lot of people are aware of.

So can you give us an idea of that is? So the default mode network is one of the major brain networks. So a lot of patients and people and even other clinicians understood the brain largely through this old concept of a catecholamine hypothesis that looks at neurotransmitters such as serotonin, norepinephrine, dopamine.

And that's how most people think of their brain when people come in and say, hey, my brain is out of balance.

Understanding the default mode network

I need some chemicals or something like that, some medication to kind of bring my I think I have too low serotonin,

too high seratonin or something of that nature.

That's a little bit of an oversimplified process and what the brain really is organized around networks as opposed to just whether you got low or high of a neurotransmitter or not.

Now these neurottransmitters are important, but they help to govern how these deep networks function. but they're not the end all be all. Frequency matters, for example.

How these neurons are going to flow together matters. Um, how they oscillate, How they relate to one another, all that matters and that's not just shaped by neurotransmitters.

So of the major brain networks, the default mode network is a really important one. Centri-executive network is an important one. The salience network, is important.

Their attention networks are important, the limbic network as important and the autonomic networks as well. And so those networks, when they're functioning well, their brain is doing really well and when it's not, we get into problems.

Default mode network. It's a really critical network that regulates our autobiographical life. This is when someone comes in, I would just mean with a patient who says, you know I feel like my life is over.

Like what do you mean 32 years old? Well, I just feel like, you know, the things that I'm going through, it just like I messed up my life. I wish I could just start over and you start everything over.

Just things are not going well. So the way he's speaking, he speaking out of his default mold network and he looking and evaluating his sort of life in the past.

He's assessing it to where he is at now. And he like judging it's not be sufficient in how he likes it. In other words, the narrative that he's living in and the reality are not one in the same.

He doesn't like that. So he wished to change it. Instead of like, you know, looking at that network and saying, hey, that narrative I'm living out of is not working well, and maybe I can go about tweaking it, he is looking into it and projecting it onto his life and say, my life is now well.

And that's a really dangerous position to be, because this is how a lot of people get into suicidal sort of situations when they begin to project the falseness of the default mode network onto the external relight.

And so the Default Mode Network allows us to kind of come into ourself. We can use that to fantasize about things, both positively or negatively. we can us that remember things about our past.

It tells us who, what, when, where of our stories, and it shapes our inner life. When the default mode network is active, we're largely awake. We're not as engaged to the outside world.

we can go in there and think a little bit more. Sometimes people get stuck in the Default Mode Network. And this is the person that has an issue with either the central executive network that tells you how to plan, organize, strategize, and outward sort of focus or outward so the plan.

And that's been governed through the salience network. That's a toggle switch that tell you which mode to be in. So if your salience network doesn't toggle you out of default mode network into central executive network, then you get someone who just stuck in daydreams, they're stuck on the internal world.

They can't really think about you and what's going on. they really can get outside of themselves very much and they can be trapped on inside.

Limbic network, anxiety, and emotional regulation

Or if it's not functioning well, this is where somebody has too little of activation in the default moment. You say, hey, what do you think? I don't know.

My mind is just blank. And they just can't come up with anything about themselves. They can talk about themself. Can't really go back in their past. It can remember things.

I can really focus on a lot of things like that. So it gets really troublesome when people have a difficulty with this network and the need to regulate this now where it is key to how to regular internal life.

OK. And then some of these other networks, like you mentioned, the limbic network, is that involved with some the mental illnesses we see? Is that involve with anxiety, depression, those kinds of things?

I mean, how does that factor into the picture? Yeah, so the limbing network is regulated also by the cellulose network. It taps into with the amygdala system and the Limbing Network is where we're going to be regulating the precision of our emotions and that's going the damp regulate the position of behaviors and things.

One clear case where we see this become a problem, like in the case of pandas, where you have a neuropsychiatric infection and it goes into the limbic system and then dysregulates it.

Or we'll see a situation of mold toxicity where it inflames that part of the brain. And so you kind of get this sort of passionate, driven, sort-of instinctual impulses pushing up.

And a lot of times you don't have the central executive network working well to counterbalance it. So you have these impulses pushing up. You don' have like a frontal inhibition pushing down to contract it and so a lotta times, you just get people act out of rage or sort of uncontrollable emotions and things of that nature.

or they just have just too much sensation. They just can't regulate that. So everything feels overwhelming. Okay. Having good regulation of the limbic system allows us to regulate the perceptions to which we're going to be viewing ourselves and the experiences that we have.

No, that's very cool. I mean, I always look at these kids and I think they're in sympathetic overdrive, like their brain's high on adrenaline, they are aggressive, or not able to auto-regulate.

But I like this idea of, you know, networks and this network's doing this process, this networks doing that process. That makes a lot of sense, and you always love when the biochemistry and the neurology fits what you're seeing with the kid.

I mean, it makes a lot more sense than what I learned in medical school, like you were started with, with neurotransmitters, and this is a serotonin problem or a dopamine problem.

That makes it a whole lot sense. So, what do you do about these networks?

Listening to language and assessing brain networks

How do, you as a neuropsychiatrist, how do treat these network? What kind of tools are you using? Yeah, so that's a really important question. So I like to talk to persons to see how they're speaking.

And I'd like the see the words that are kind of coming out. I have psychoanalytic training. When I'm listening to what a person is saying, I am listening what it means, what are some of the thematic meanings, and then I also mapping it on to some networks that they are coming from.

Why that matters is, as much as sometimes I might want to go and just tweak these sort of networks, a person also has to be ready for them to get tweaked.

And so if somebody's living in, let's go back to default mode. If somebody is living a certain narrative, whether it's

right or wrong, helpful or not, they have to really ready to switch out of that narrative.

So let us take somebody who is in victim mode, They've been the victim for a while. They get a lot of sympathy. It's one of the major currencies to get attention and attachment.

And although it may be faulty, although they might be the most helpful, adaptable, progressive sort of place for them to be, if they're not ready, to move out of it, they will undermine the treatment or invalidate it or not participate.

So that person would be really stuck in the default mode network? They're really in there. Okay. A person, let's say, have victim consciousness, there's stuff in victimhood.

They have an overactive default-mode network, an underactive center-executive network and an interactive limbic network. Right. And a faulty salience network so they're stuck there and that's sort of the paradigm.

So I want to get a sense of what this person is. And this is what a role where maybe psychotherapy comes in, where I might have to engage in the psychotherapy first to kind of see if I can get them engaged in this process and loosen up before I could go into anything biological.

Why I say this, because I have had the experience where, I'm thinking, OK, got all these tools. I just jump in here and do it. They're not ready and they reject it, right?

So there has to be acceptance There has be a sort of call to their will to want to being in a different place Wow, so that's really important When I get ready to assess, I can assess with a QEG, a quantitative EEG.

I could assess whether PET scan or a SPEC scan, or function MRI. Now, some of those are not easy to get because of cost and other sort of things. The easiest to give is a Quantitative EEg.

And the SPECs scan is probably easier to getting than the others. What those things will tell me, the QEG would tell how the brain is communicating. Right.

Through electrical waves. The SpecScan would how how brain's communicating through blood perfusion and what area of the bring is commanding blood flow.

So in other words, if an area the of brain shut down, it's going to command less blood than the area that's kind of revved up. Sure.

Using QEEG and imaging to guide treatment

If a person is in a lot of sympathetic overdrive, they have an active limbic system, that part of their brain going be command more blood to kind fuel that area.

So then we can derive some information about which one of these areas of the brain are overactive or underactive and what networks are involved in them.

And so we combine that information together. Depending on what's going on, what is driving it. So if a person is, let's say, in active mold exposure, and they're in cell danger response, that's not the time that I really want to try to get in there and modulate and regulate those networks too much.

I want try calm down man cells and limbic system and things of that nature before I get into start tweaking networks. The brain is in too many crisis mode at that point.

So, assuming those things are kind of calm and regulated, I then can take the treatment tool, use photobiomodulation, high-power laser, and then I couple that with TMS, which stands for transcranial magnetic simulation.

Okay. The QEEG would give me a sense of what parts of the brain, left and right, they're coordinated together, and then from back to front, if they are coordinated.

Is this like coherence? Yeah. Okay. If they can give you some coherences. So if the coherense is not intact, then I can take the combination of those two near-modulatory agents, And then, I could be able to start stimulating the brains gradually, subtly.

And depending on which one of these networks are off, it's going to determine where I'm going be putting the leads on that laser or the core for the TMS.

So let's say I detect a very hyperactive cellulose network. I'm going to put the coil right over FZ on a 1020 EEG system. Or if the default mode network is a problem, I can do that either over the F3 or FPZ, or I could do it back at PZ or F4.

And so depending on what I am seeing on imaging, what kind of getting questionnaires and interview with the patient is going determine where on the brain I will put those leads and coils.

From there, I'm going to gradually start in training those nerves to start firing in a different direction than they have then. So that's kind of a slow, gradual process over time.

And I think what we began to see is that the brain begins to started moving. The TMS is a magnet, and so then it creates an electromagnetic field with the electrical field of the bring.

If anybody understands some of basic physics, you get movement when you create an electromagnet. And so from there we can start moving the brain in a different direction.

This is really important because for a long time now we didn't think we could shift the brains this way.

Photobiomodulation and TMS treatment approach

We just thought the bring was stuck and your personality was suck and this is what it is. And you're going to need some medications to hold you together and a therapy for the rest of your life.

That's no longer the case. OK. I mean, what makes you decide which one of those modalities you're going to start with? Is it always you going start it with the laser, or are you always starting with TMS?

Or how do you determine that? So the lasers are going work at the electron transport chain in the mitochondria. So we're gonna be trying to power it to get more energy.

This is primarily red? Red, green, and purple. OK, yeah. Or violet. So the brain needs energy. So typically, laser is going to come first, because I really want to get energy flowing first.

If we're going make any change in where we are going prune neuronal connections and build new neurono connections, we'll need energy to do that. It takes a lot of energy pruning and removing neurona connections.

That's also why you're prepping the patient before you ever even start. And you didn't truly know this, because a lot of times a patient will say, it's too hard to change the way I think.

Right. That phrase is an energy phrase. OK. It means they need more energy to do that. Gotcha. Yeah. And so I really want to get in there and get the mitochondria as much as possible robust and firing and producing more.

Again, we can make more movements in the brain. And then you set up the TMS specifically to stimulate primarily, or are you doing both stimulation and inhibition?

So I can do both. So if there's a lot of over-excitation first, I want to try to bring it down and regulate it before I start

trying to move it in any other direction.

You would tone down, you would inhibit before you stimulate? Yeah. OK. That's the typical rule. And how long does the therapy take for most patients that you're seeing?

Good question. If we're talking about a three-year-old that has autism, maybe one round of treatment, which is about six weeks. Maybe a little longer, depending on what's going on.

If were talking somebody who has near-degenerative condition, an elderly, let's say 77 years old, then we might be talking two or three rounds of treatments.

It kind of depends, because that person has lived more life and had more brain insults. And so a standard round treatment is around six-weeks? Yes, about 30 treatments And then if you're doing multiple rounds of treatment, like how much time in between treatments are you talking?

So that's a good question. So it depends on if we're getting consistent progress. OK. If the person is consistently progressing, we keep going. And we reach a plateau, then we can take a break at that point.

We might do some other things to tweak or just get a brain rest and then come back at some distant point and get going again. How much of your practice is kids on the autism spectrum?

I would say I see more pandas in autism. I have a good chunk of people who have panders. Okay.

Treatment planning, duration, and pediatric cases

And you take referrals from out of state or is that too difficult? If people are coming in for just neuromodulation and things of that nature, then yes.

If they're going to be more of a primary patient and thing of the nature it'd be a little harder. So they would have to, I mean if somebody was coming for the neuromojulation part of it, it would be staying there for six weeks for treatment pretty much?

How often are you doing, like, the TMS or the laser when you're doing the treatments? So, depending on which protocol we're running, it's twice a week, so three times a we.

We need about 48 hours in between as to not overly stimulate the neurons and the microglia and put them into an overly sensitive state. TMS is daily, so we're combining them together.

We need to kind of be thinking about how much we are stimulating the brain when we combine them in together, but on average it's daily five days a week for Tms for six weeks and then two to three times a weeks for the laser for about five or six years.

And what would you say is your success rate in treating kids on the spectrum? Our worst patients are always the Pan's Pandas kids and we're always desperate for what else can we do for these kids, right?

So I mean, what what, would, you, say your, success, rate is with these modalities for those kids? The success rates going to depend on, unfortunately, how much the parents can invest and be involved.

That's going, to determine everything. And by invest you mean what they're doing outside of the treatment center or every single year? Yeah, all of them.

So if a parent was able to do everything that was possible, I think the success rates are pretty good. But unfortunately everybody can't. I'm always working with limitations in terms of They can't do this full thing, so maybe we can do partial this and things like that.

So it varies. I think some of the cases that have gone really well are where the parents have really understood the issue and they came in ready and accepting.

And it wasn't really a lot of conflict with a lotta outside narratives about what's going on. Then those parents are willing to invest in things of that nature.

Those cases are going much well. But when there's been kind of conflicts around, well, it could be this, could it be that, and there is a lot of confusion about diagnosis, then I see people kind a little bit more hesitant about treatment.

But the younger they are, the less we have to contend with, less is going on. The treatments are really good in recovering. Okay. Well, I mean, just as a hypothetical patient, you have a seven, eight-year-old who actually gets exposed to strep and has the sudden onset of symptoms.

PANDAS, outcomes, and family involvement

Maybe they had some ADD, maybe they have some minor psychiatric symptoms prior to that, but they were functional. and now they're full-blown, OCD, won't leave the house, separation anxiety, all the, I'm assuming, limbic dysfunction you were discussing.

What's a success rate with that sort of person where their parents are on board, they know that this is Pandas, and they understand what Pandus is all about?

I mean, that's the patient that you feel you can make a big difference with? Yeah, so I don't do every treatment in-house. So the things that I can do, I think, help pretty well.

If I have to combine it, say, they may need IVIG or they need plasmapheresis as a new emerging thing is coming up, those could be some sort of barriers.

But in terms of getting them under control and regulated, the treatment is pretty good for that. I do not have a solid percentage.

Closing remarks and contact information

Now, when it gets to resolving the issue and we have to bring out the antimicrobials, antibiotics, and all those sort of things, that can vary. I think the longer the treatments are, depends on the patient wanting to go with antibiotics or herbals and things of that nature.

There's some variance in there. But in terms of getting them regulated, I wouldn't say… I would say that it's a good three or four months before you bring about the regulation part, but the resolution part I think is a different story when we have to bring out antibiotics and all of that.

Well, this is fascinating stuff. I really appreciate you coming here. Appreciate you giving the talk you gave yesterday and the information here, how can people get a hold of you?

I am in Malta, New Jersey and my telephone number there is 856-983-4940. The website is newimagewellness.net and I will email correspondence to third party clients at new image wellness.

net. Okay. All right. Well, thank you so much for being on our podcast. We really appreciate the work you're doing. Thanks so much for joining us today.

I'm Honey Rinusella, and this is MAPS. As we heal tomorrow's future, we appreciate you joining on the journey. We'll see you next time.