Unpacking PANS/PANDAS Part 2: The Functional Medicine Approach Transcript

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Genetics, Stress, and Sponsorship Intro

This is Dr. Toms. Your genetics shape how your brain and body respond to stress, focus, and attention. One important example is the GAD1 enzyme, affects how glutamate is processed. If this neurotransmitter isn't broken down correctly, children may struggle with anxiety, agitation, or focus. At Hope for Healing, we use custom genetic panels developed with the Gron to uncover these insights and guide treatment. We're thankful for their sponsorship of this podcast and their support in helping us get to the root of health. Okay, Dr. Kay, I am so excited to continue this conversation in part two of our Pans Pandas podcast. Last time we talked a lot about the how to kind of find out if you have Pans Pandas, what is some of that preliminary testing we would want to look at. But now that you either have PANS-PANDAS or you know that you have PANS-PANDAS, you are your child. You before being in the functional medicine world were a conventional pediatrician.

Conventional PANS-PANDAS Treatment Overview

And so what was either your experience or what is your thoughts on the conventional approach to a PANS-PANDAS treatment? is there, what does that look like? I really don't know. I had had just a little bit of exposure to PANS-PANDAS and Typically, the conventional approach, and this is outlined on aspire.care, PANDAS Network, you basically test for strep and you may or may not be positive. You look at the immune situation of a child. Like you look at their, it's called immunoglobulins, immunoglobulin G and some subclasses, immunoglobulin A, because that's what helps us fight infections when they are first brought into our body. Really the conventional approach is using a lot of medications, potentially steroids, prolonged antibiotics, um, flammatories, conventional anti-inflammatories. And I use a lot of ibuprofen, ibuprofen for just a limited period of time, like seven to 14 days with food, no longer than 14 days because ibuprofen is very difficult and hard on the gut and it can cause kidney damage. Would the conventional approach overuse it though? that because I know you stepped into how you use it, but how does that work? okay, that's how it's used too. We blend the best of both worlds, but also looking at intravenous steroids, oral steroids, because that suppresses the immune system, potentially using antiviral medications, but also using something called intravenous immunoglobulins and cognitive behavioral therapy. And so that's the conventional approach is, and I don't mean, again, I'm not meaning this in like a bad way. It just feels like throwing a lot of medications at something mixed with, with which we would encourage a hundred percent, which is mental health therapies and all that stuff. But I think sometimes people can feel like, man, you're just throwing a lot of medications at me and are we actually figuring out what's going on? So how would that differ in the functional world? So I've used all of those and many times for severe cases, these kids are hospitalized in a psychiatric hospital and they're given a lot of psychiatric medications. But then once they're released and they're stabilized, you need to look at other ways to approach this. So the functional medicine approach. would be to start with modifiable lifestyle factors, which we've talked about, in order to restore balance to the body. we mentioned this previously, but I look at the home. I look at the home to make sure there is not water damage in the home that is undiagnosed. Your house doesn't have to smell bad. You may have no microbial growth that's visible, but there might be mold in the home. That's the first part. And people say, well, there's mold everywhere. Yes, there is. But the difference is if you're in a controlled environment and the humidity is too high, you've just added food, which is cellulose on drywall. well, and then you also talk about there's mold everywhere, but there are very specific kinds of mold that actually make you sick.

So it's not all molds are going to make you sick like this. They're very specific ones, right? Yeah. It's not mold allergy either. You can have mold allergy and can have environmentally acquired illness, but there's only… It's not a necessary step. Exactly. So there's five species of mold that make people sick. So we recommend testing for that. And then the functional medicine approach is also obtaining a very extensive history, a very extensive and complete nutritional physical exam. So when you go to your pediatrician, they may say you have keratosis pilaris and try to give you a topical cream called lachydrin for your dry bumpy skin to go away. But has anyone looked at the balance of the zinc and the copper and your omega-3 fatty acid deficiencies and if your vitamin A is okay? So we look at that. The other thing on a nutritional physical exam, we want to see what the nail beds look like.

Functional Medicine Root-Cause Approach

If there's little half moons on the thumbs, those little half moons need to go to the fourth nail. If that's not present, your child is missing vital amino acids. So we'll have a link in the show notes on a clean, non-inflammatory containing amino acid supplement. You do not give a child or an adult that needs amino acids that has PANS-PANDAS glutamate or glutamine, okay? Even if you've identified that they have increased intestinal permeability, because more often than not, you're going to set up a bomb in their brain by giving them glutamate or glutamine or glutamate, and it's going to be bad. what does that bomb look like? So when you say set off a bomb, what does that mean? Okay. So, and this involves some of the testing that we do here at Hope for Healing, which is genetic testing. If we identify that a child or an adult has a lack of an enzyme called GAD1, glutamic acid decarboxylase, we have excitatory and calming neurotransmitters. So if you lack this enzyme, GAD1, if you give a person with that glutamine, L-glutamine or glutamate in their amino acid supplement, then they will become much more anxious. So the bomb looks like an increase in rumination and increase in OCD and inability to sleep and lining up their cars and their trucks and, it's bad. It's bad. then, mean, for anybody who listened to the last episode, that would just make the pans bandit symptoms increased. And so you're like, they're already experiencing these OCD tendencies. And now we've just set that on fire, which is why we're like, Hey, they're very specific things that you can do. you just have to do it and that don't contain the right order or not adding fuel to the flame. so I look, okay, let's get into this a little bit because you said something that I think is really important that the benefit of Dr. K is fully a functional provider. But what I love that you have always done and you've really taught your providers and providers that have either sat under you or been a part of you to not throw the baby out with the bathwater, which means we do. all of these things because these children and patients. So we take this medication and you will have that combination.

But what we're not gonna do is just say this is your whole entire life for the rest of your life. We're gonna try to also. make sure you're creating a healing environment. so I really love that. And so in addition to a moldy home, are there other things that we've discussed that we have to be careful about that are technically a part of the root system? Yes. So we do special functional testing to identify infections that may not show up on traditional lab testing.

Got it. So looking for these occult infections that might be tick-borne or That's called vector borne illness. And that there's a whole category of that on the aspire.care website. Now, just to give you a picture, our practice, we have children in our practice with pick lines to, you know, at PortaCast and also a child just recently that We're going to do something called the cuffed internal jugular line because this child is deteriorating incredibly rapidly.

So we take it incredibly seriously if they need antibiotics IV because they won't take stuff by mouth. If they need nutrition IV because they're malnourished, they might be obese, but malnourished. so back to the functional medicine approach, optimizing sleep. So we've talked about this before, but simple hacks. elevating the head of the bed with those little furniture movers that you buy from Lowe's Home Depot so that gravity can help the brain drain, ruling out seizures, partnering with pediatric neurologists. And we're blessed in the city of Houston to have a couple of really awesome, functionally minded pediatric neurologists that work with us. But as a primary pediatrician, but also a functional medicine expert and a PANS expert, we um We go uber deep. also do, we like to obtain a really good dental exam.

Look at the sinuses to make sure there's no infections living in the sinuses. Um, and at the roots of the teeth. And we look for, well, we were talking about amino acids. So that's something on exam, omega-3 fatty acids and amino acids. So we want to replete those deficiencies because if the child presents. and they have profound OCD and ticks, they're burning through their neurotransmitters and those neurotransmitters are made by little short chains of amino acids and they become nutritionally depleted. So we want to those back in. right. Functional medicine approach. I know functional medicine, there's so much.

Yeah. Okay. So like I was saying before, which is we hope for healing and again, we are still always going to be including the Pan's Panda's information that y'all can have if you aren't in the state of Texas. But the cool thing about what you were talking about, Dr. K, with the neurotransmitters, finding out if they can take glutamate or not, how does someone know that they're susceptible to And I know we talk about a little bit and it's a swab, but for those of you who may not have listened to other episodes of that, we do a lot with genetics here. And so I think you

kind of teased on some of that. Could you expand a little bit about how genetics would impact your care plan if you have PANS-PANDAS. It has a profound impact. Genetics are basically the foundation of what we do here.

Genetics and the Wellness Blueprint

And when you have a medically complex condition such as brain inflammation, it may not meet the strict criteria for PANS-PANDAS. I cannot treat in isolation. Our body is a symphony and when you have a child or an adult that has all these things going on, we have to look at multiple systems. our sponsor is Fagran and Fagran genomics is basically the foundation of everything we do here at Hope for Healing. We asked for that because it's this beautiful roadmap. So we need. a comprehensive genetic evaluation.

And here at Hope for Healing, that's what we call the wellness blueprint. It's a blueprint that unpacks the inflammatory status of a child or an adult's brain with PANS-PANDAS, the neurotransmitters, the brain regenerative capability, how the body receives fuel to clean itself out, how the body detoxifies, how the body processes B vitamins of all kinds. And the essential vitamins and minerals that you or your child may not have the receptors for, and there's some hormone markers. that comprehensive panel is something that we need. If you have PANS, PANSUS. Now, if you've had some genetics done someplace else, we'll look at that and we'll determine what you may or may not be missing and incorporate that and ask you to maybe buy those few little panels. If somebody is not planning on maybe. Again, we've talked about a lot of things and maybe are a little overwhelmed with the idea of the neuroquant or idea of all the testing and all this stuff. Would getting your genetics done first help you or your child, like help them or their child move forward? Like what kind of information would that give outside of almost, maybe as the first step or what would you? You know, when a house is burning down, what's the first thing you do? You put the fire out and that's what's happening when you've got pans pandas. So looking at inflammation. So that genetic panel would be step one, but if, if that would be too much, would say do our autoimmune inflammatory panel and then do the neurotransmitter and neurotropic panel. And we'll have that in the show notes. That's the first place to start. and you could purchase these incrementally to get going. So the first thing is put that fire out. think that's super important to mention. Specifically because I think, again, what we, I feel like this is going to be on repeat, guys. I'm so sorry, but I just think it's super important for you to understand. Like we're not saying that panspanas can be treated without medication or just holistically or, or, um, We need, we will need tools in your tool belt that come. But I think the biggest thing that you've mentioned in the last episode a lot was that it's really, and maybe this is really the big difference between functional medicine and a conventional approach to any disease is that we need to get to why this is happening. And we are on a um hunt to decrease inflammation and remove infections. And that are happening within the body. But. I know there's probably more to this and so maybe you can dig a little bit into this. What would you consider PANS-PANDAs? We have selected that. You called it a, how do you get the diagnosis? You called it something in the last episode. It's a clinical diagnosis. There's not one test that says that, no, that can confirm that. There are tests that confirm it that shows circulating autoantibodies to the brain. the brain attack. It's not like a strep test though, right? So it's not like strep where I would go take a test and yes, you have strep or don't have strep. There's not that for pans pandas. It's a multi look approach to it. Is that right? So I'm not going to ask someone to spend 400 and some dollars on a specialty test until I have made the clinical diagnosis and we're batting a hundred percent.

Every patient that meets the clinical diagnosis, if the parent wants that test, we'll do it. There's also some LabCorp tests, but the LabCorp autoimmune encephalitis panels are very rare entities. And so it's much more common. There are more common markers that we can identify, but if we've identified it, many times we can treat a patient without having those specialty tests that… you know, add to your financial stress and burden. So you're saying so that you can understand. let's separate the two different kinds of tests that you said. So specialty tests in regards to diagnosis versus specialty tests in regards to treatment. Can you separate the two of those things? Because you would still want a neuroquant and the MRI and that's important for figuring out the course of treatment. But, or is that not always necessary? I guess I'm just asking. So we do like to get an MRI of the brain if the child is presenting with these symptoms. And what a neuroquant is, is just taking the MRI and inputting it into some software that compared the right and the left hemisphere. want to know, number one, is there a brain tumor? Number two, you want to know about the brain structure. Are all the structures present?

So for me, that's standard of medical care. Also obtaining an electroencephalogram to make sure there's no frank seizure activity. Well, you can have PANS-PANDAS and have seizure activity, but what's causing it? So it's

multifactorial. Now I don't have to do specialty testing to make the diagnosis of PANS-PANDAS, meaning that it's based on the symptoms and the physical exam of the child or the adult in front of me. Okay. love that. I don't have testing is for determining what is happening. The additional testing is determined what is happening. One to roll out to have seizures and not know that you're having seizures can be really damaging and scary along with a lot of the other things. You're just saying to start the process of healing from PANS-PANDAS that is not necessary because it's based on a clinical diagnosis.

Yes. Yeah. I love that. you can identify. even have, and she wouldn't mind me saying this, in the area, a licensed professional therapist who a couple of summers ago said, son meets the criteria for ADHD. And I just asked her a few more questions. And I said, well, in actuality, based on the symptoms that your son is presenting with, I actually think he may have PANS. And she's like, I don't think so. I said, well, let's test, let's test. So in order to give the parent, she had the wherewithal to do what we call the autoimmune brain panel by molecular labs. used to be called the Cunningham panel.

Inflammation, Immune Modulation, and Detox Support

She needed that evidence to believe me. that allowed us to move forward in moving her son into remission and not just slapping the label of ADHD on him. Yeah, he presented and met the clinical criteria for ADHD, but there were some other things that were red flags based on the history. And now she's in the community, able to identify this in her clients and refer them back here so that we can help those people. Well, and just imagine what it's given her and tools that she's able to help her clients too, like as a provider to go. hey, like I can help you differently knowing how this looks and knowing how this is because I know that it's both and, right? Because it's not like we, Dr. K talks about this a lot. It's not, we are not against ABA therapy. We're not against any of the extra, no, we think it's important. We just think it's important that it gets layered in at the time that the patient or child or adult or whatever can handle that, right? We want them to be successful. at those therapies. want them to grow in those therapies.

So I really appreciate seeing how both that increase. em Okay, so this is another one that's kind of important when it comes to our next steps of treatment, whenever it looks like treating pans pan does. Um, so we've looked at how we look at genetics and how that's incredibly important, but are there any sniffs on our genetic panel that relate to the susceptibility of a panzan panbus? but it's not just one thing. It's multiple things. So on our inflammatory sections, there's something called CTLA4. Stands for cytotoxic T lymphocyte marker. If that's abnormal, then. When foreign invaders are presented to our immune system, that doesn't function correctly. And our T cells, T regulatory cells, they're the first line of defense that we have when a foreign invader enters our body, like strep or viruses. If that doesn't function properly, you develop runaway inflammation. So CTLA-4, and there's another one called STAT.

and another one called tumor necrosis factor. So those three are very important to know and we modulate them differently. So when we talk about modulation or treatment in the functional medicine arsenal, we also use immune modulators. So using a pure curcuminoid, like even a liquid curcuminoid, can be used to treat that. And that's something we'll probably have on our landing page for this episode. And there's also a medication called low dose naltrexone that modulates something called the toll-like receptors system. We have toll-like receptors all through our gut and through our brain, our body, our nervous system. and you can well inflammation.

And then there's also another receptor called the CB2 receptor that's a part of our cannabidiol system. You can do topical CBD or oral CBD if you identify genetic abnormalities that are involved with runaway inflammation. So we learned a lot about cytokines. We heard a lot about that during COVID. Well, we've identified with PANS-PANDAS, there are cytokines being produced and you can stop those bad boys if you modulate those receptors with these agents.

Okay. There's also prescription cannabidiols, but I'd rather have something that's naturally formulated because it acts on other systems at the same time. So we don't use any THC in our clinic. I just said, I'm not doing that. I'm not a THC dispenser. There's a lot of medical legal implications, but we use that topically and orally and oh my gosh, it's amazing. So for the right person, the right amount, the right time, you know, not just guessing, you don't want to guess. that's, those are some of the things that we use here functionally to modulate the immune system. So I was talking about how, what genetic SNFs. when we see those vulnerabilities, that's the tools that we use. So

our, the genetic tips that we pull kind of give us that information about how we can modulate the immune system better and we can know that. And the cool thing is you can kind of know that no matter who you are, but specifically it's very important for patients who are exhibiting PANS-PANDA symptoms or have been clinically diagnosed. So those are really cool ways to start the process for that. One other thing that we see very commonly in children and adults that show up with the clinical presentation and then laboratory confirmation of PANS-PANTAS is, um you know, there's not one lab, but it just dovetails on our clinical diagnosis is also It's in the detoxification pathway. It's called GSTM3. It's glutathione S-transferase mu gene. And it's glutathione that concentrates itself in the brain. Many times we'll see that these children and adults don't have enough of that particular gene. So they need oral or IV glutathione. Okay? Yeah, that's good. One other piece. is some autophagy genes. That's the ability for insulin to bind to the insulin receptor, glucose to come into the nerve cells and the brain cells and every cell in the body to give the brain and the nerves fuel to process and work appropriately. So we find that that autophagy is greatly impaired too. And that's where we would start. Put the fire out, clean out the cells, you know, Bring everything into the foyer, haul the dump truck up to the front of the house and then detoxify, pull the bad boys out. And that's where we start. That's where we start. Okay. So you said this, and I think this is really important is so because I heard it from both ways. so kind of we've talked a lot about treatment. We've talked about how genetic plays a part piece and how it kind of almost helps us know what we need to address first. And Dr. K as a provider. How do you ask patients to or recommend that patients address the infection that's going on that's triggering the things as well as the resulting inflammation or inflammation that's existing in their body? Well, if we've identified an infection, if it's viral or bacterial, we will most likely use an oral antiviral in conjunction with an herbal antiviral concoction. There are herbals that you can literally mix in an ounce of water twice a day that are profoundly impactful. And you can even shed spike protein from the body from COVID if COVID has been the trigger. met with a young woman yesterday who's 17 years old yesterday that she was toodling along, but influenza A and January, February of 2025 and that took her down the rabbit hole. wow. So she was so scared. And the other is when I think about the inflammation, if I'm going to treat with either antimicrobials, either prescription antibiotics, and many times I will give our families, if we identify, for example, that mycoplasma pneumoniae is one of the infections that is causing problems or strep.

Infections, Diet, and Environmental Triggers

I will make sure they have several refills of those antibiotics at their pharmacy so that if they could get sick on the weekend or, know. They're capable of treating it. Exactly. Sooner rather than later. Absolutely. Yes. And you know, the other piece of this too, we were talking about studies. You don't just give azithromycin or chlorithromycin a macrolide antibiotic without doing an EKG of the heart. because there's layers to this. This isn't just, here's your drug, let's go. But then the herbal antimicrobials. But then I would ask the family to remove inflammatory foods from their food plan. That's very powerful. And if you're sitting here going, have insurance, I can barely make it on what we're getting. And you have so much power in your kitchen to lower inflammation in your child's body. I love that. Well, I love that because it's yes, we have the antibiotics that are going to need to kill and trigger, but you're almost giving them another tool that they can choose for themselves, and advocate for themselves and fight for themselves. And I really appreciate that. So this kind of ducktails, if you want to dive a little bit more into this, the role that diet and nutrition play in the specific recovery process of pans pandas. You you really walk a very fine line in children with pans pan just because some of them may starve themselves. Okay. This is not like your typical, stubborn, picky eater, neurotypical child. So a lot of times children are addicted to certain foods and they only have a few food items. So you have to be very careful about what you stock your pantry with and your refrigerator with, but you need to feed them real whole foods.

And, know, they may be dangerously close if they have an eating disorder, but I. You know, if you're in an eating disorder clinic, it's like, I would not just want to have a good relationship with food, but I would have want to have a good relationship with food that is non-inflammatory. you don't want to just feed macaroni and cheese because it's a food.

No, you're actually poisoning your child by giving them mac and cheese that's made from real cheese and gluten. Okay. So you would want to remove gluten and dairy and you want to remove as much processed stuff as possible and do it one at a time. Okay. You have to, you have to maintain their nutrition, but you know how I mentioned those amino acids that don't contain glutamine. You can try those and we even have little bars, brownie bars, blondie bars that are clean amino acids. So. It's just like introduced, but this is where you partner with a medical provider. They work with you intimately. And also in our practice, having a health coach, um, know, because a

health coach could really help you walk this line and design diet plans. have dietary software to help you with, okay, my kid will eat this.

they won't eat this and it's like, okay, let's use this menu of what they will eat and let's try to find some lateral shifts for what they will eat. So. I love that. Starting there.

so, that really plays, mean, kind of what you're saying is it plays a huge role in the recovery process because this inflammation is just, well, inflammation makes your body work harder. And right now, if you're trying to fight, well, just think about in general, right? It's like when you have a cold, I think everybody can relate with that. And maybe you can correct me if I'm wrong, Dr. K, but when you have it a cold, your body's working hard to fight it, to do what it needs. And then what we're saying is we're in our foods, in our lifestyle choices, that could be stress, that could be not sleeping, that could be any of the other plethora of things that you mentioned. We're adding that stress on top of our body that's trying to fight and heal itself. And so if we're not partnering with our, not really even just partnering with Hope for Healing, not partnering just with Health Coach or whatever provider you want, if you're not partnering with your body to create a space of healing for you or your child, I think that can definitely, I clearly see by what you're saying that that plays a huge role in this process of recovery. Very well said, Lauren. Very well said. It just kind of summarizes how you need to look at things. That is a hard fought understanding and you know that from me, Dr. K. Through the very healing process and personal coaching as well as helping other patients, that has been a process of learning and having to step into that role. Okay, so we talked a lot about the first steps for treating kids with PANS Pandas was really trying to understand their system as a whole, which is why at Hope for Healing, when we know that you're presenting PANS Pandas, we would go straight to the wellness blueprint. What I love about the Wellness Blueprint is after we get your PANS Pandas in remission because we fully believe that is possible for you, it also gives you a lot of really awesome things to look into to help optimize your health after that. And so I think that's really great. But besides that, are there any other important steps that you would think would be important when treating a child or an adult with PANS Pandas? You know, this kind of lends to the various different things that functional medicine offers, and we're not going to go into deep detail what this is, but you can also purchase a home ozone generator. you know, people talk about ozone.

You don't breathe it in, okay? But ozone is a very reactive triple oxygen molecule, but when it hits fatter protein, it becomes a very stable molecule called an ozonite. are like the gift that keeps on giving. They hang around. Now, you can put it in your ears. You can hold your breath and put it up your nose. And for children that can't hold their breath, you can bubble ozone gas through olive oil and they can have nasal ozonides. And you can, we talked a little bit earlier about vascular access when children and adults are critically ill, okay? They can get IV ozone. We take their blood out, put ozone gas in it, and then put the blood back. That can go anywhere in the body to eradicate these infections. And then we stack that. put an IV that has anti-inflammatory things in it to replenish the stressors that this has taken out on the body. So a functional medicine approach layers that in, but you can do that in your own home. if you can't come to a functional medicine practitioner and potentially eradicate the infections that are causing pans-panses for your child. So that's a huge thing that you can do. So yeah, I would just say that there are many, many ways to skin a cat and you can eradicate these infections and also take care of these. environmental triggers like living in a moldy home. We've had some people that had a home that had no evidence of mold, but it had a catastrophically high level of mycotoxins in it and they had to get out. had to get out.

em We're not going to lie. We're going to tell you the truth, but those things are tools and you have to put all those results together to take the next steps forward.

Hope, Practical Next Steps, and Closing

But you have a lot of things that you can do for your child. And that's just a taste of what we would venture into in a functional practice in conjunction with the allopathic or Western medicine approach to PANS-PANDAS. And like I said, we blend the best of both worlds here. And it just depends on where the patient is at, that kind of a thing. I really love that. Dr. Kay, I just want to thank you so much for your time, for this episode really talking about what treatment looks like for those who are in the process of trying to figure out like, okay, so now this is what treatment looks like. Is there any tidbits of hope for this very complex treatment plan?

So it was a little overwhelming. Is there anything that you could give them the hope or just to breathe just some

grace and peace into them? Pans pandas does tend to hit you overnight and the bottom drops out. Order to decrease the inflammation. There are some things that you can do. For example, using ibuprofen for seven to 14 days and going to Panda's network and using the algorithm there, taking it to your pediatrician or your family practice doctor.

Or if your child is severely dysfunctional at this point in time, even going to your local emergency room with that algorithm and saying, you know what, my child is presenting with this, this, this, this, and this. Can you help me? Can you help me? If they can't, you've got to move on. You've got to find someone that can. And even though we've talked about tailoring treatment based on the genetic findings, remembering that antiviral medications that are commercially available can be very helpful. Using the ibuprofen like I spoke about and doing everything you can to optimize your child's sleep, sleep environment, removing those inflammatory franken foods that you're putting into their body. You have the power to do that. So you need to feel empowered.

We also need to put on your own oxygen mask. need people that believe you and that are not going to shame you, not blame you for crappy parenting. very loving parents said to me when my third born was manifesting the signs and symptoms of pains, Pandas said, they literally said, you let her get away with murder. You know, it's subtle. You start modifying your parenting style, the way that you do things. I didn't know that my child laying in bed at night saying, mommy, I love you. Do you love me? Mommy, I love you. And needing me there with her in order to settle the separation anxiety. you know, it's like, don't judge yourself.

Okay, get help and look for therapists and people that can help. It's a lot more out there now than it used to be. So hang in there, get some help, log on to Panda's Network, log on to aspire.care, find people in your state that might be able to help you. Thank you for tuning into Doctor Talks. We hope today's episode has enlightened and inspired you on your path to optimal health. Each day is a new opportunity to make choices that empower your wellbeing.

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