



## **Balancing Neurotransmitters for Optimum Mood**

**Guest: Dr. Jess Armine**

**Niki Gratrix:** Hi, everybody, and welcome to the Trauma and Mind Body Super Conference. We're back here with a fantastic guest, Dr. Jess Armine.

He is a chiropractic doctor, he's also a registered nurse. But he also has many, many years of experience, profound experience with many different patients in the chronic complex illness area. And I know he has a lot to offer for us today. We're going to talk about neurotransmitters, but first, welcome, Dr. Jess.

**Dr. Jess Armine:** Thank you so much. I appreciate the opportunity to speak with your listeners.

**Niki Gratrix:** Now, I was very interested when I was reading more about your background. A little bit about some of the forensic work that you've been involved with.

We're going to talk about neurotransmitters and I don't know if you can make it a link to that. But you've done and also you've been involved a lot with looking into the genetic profiling and so on as well, very interesting. I'll just hand over to you, like how you got into this and how you got interested in these topics.

**Dr. Jess Armine:** Well, I've always been interested in natural medicine and early on in my chiropractic career, I'm one of the few forensic chiropractor's that there are.

Which means that I do a lot of different types of investigation, people think forensic they think slicing open bodies. But really forensics is how your profession relates to the legal profession and I was one of two chiropractors in the United States that got a diplomate in forensic medicine because I qualified for it. And also a diplomate in a forensic examination and I was a fellow of the American College of Forensic Examiners. And most of that work was investigative type work, fraud investigation, stuff like that. But the mindset was that of typically Sherlock Holmes, where you were looking at something from that particular mindset. Using thought patterns like, when you rule out the impossible whatever is left, however improbable must be the truth.

So when I started getting interested acutely in chronic illness was because my son suddenly developed schizophrenia. And as a good dad, I brought him to the psychiatrist who plied him with a ton of medicines. And this glib, intelligent boy who at the age of 10 was able to read Dante's Inferno and explain it to me, and who I had to keep up with when he was like 11 and 12, just to keep up with his brain, turned into a nonentity.

And anybody who has a child who's compromised in any way knows the severe pain that one goes through. But the powers that be, God, spirit, how do you like to put it. I simply looked up and I said, this disease is screwing with, excuse me, is messing with the wrong daddy. And started diving into it and all of a sudden in front of me, all this training was thrown at me in neurotransmitter balancing and the developing field of neuroendo immunology and the developing field in genetics.

So I kind of got into that at the very, very beginning and I was one of the people who actually correlated things. Where some people were looking at MTHFR as being the end all or know all, and the alpha and the omega, and some people call it a deity and some people call it a devil. I was the guy saying that's one enzyme and a pathway guys, how do we look at the whole pathway, and what's needed to get the pathways working, and what can affect the pathways?

And that's where neuroendo immunology came in. That started way back with Hans Selye in 1936 with the General Adaptation Syndrome and then with Adler in the 1970s with psychoneuroimmunology. And then Dr. Kellerman put it together as neuroendo immunology, where the neurological system, the endocrine system and hormones and the immune system are constantly talking to one another. And if you understood that you could diagnose and treat most conditions.

When you folded in genetics and you folded in mitochondrial function where everything happens, and that was more recent with Dr. Naviaux. And then had the mindset of if you fix the cell membrane, you fix everything, because that's where all the miscommunications are happening. You put those concepts together, which we turned as bio individualized medicine.

Shawn Bean and myself, the turn never took per say. But the concept is what I teach and when I practice and in that manner, utilizing the forensic mindset, I was able to diagnose and treat almost all conditions because I look at it truly at the molecular level on up. So that's kind of where it started and that's how it progressed.

**Niki Gratrix:** That's absolutely amazing. And I love that because you're the true medical detective. Yeah, medical detective it's brilliant.

**Dr. Jess Armine:** Sorry, I didn't bring my Sherlock Holmes hat with me.

**Niki Gratrix:** Yes, but some of these complex conditions, they do require people to dot connect and do those kinds of investigations. And this is obviously a Summit about trauma, but we're looking at top down and bottom up approaches.

So it's a big picture because childhood trauma can change the biochemistry, which in turn would then lead to neurotransmitter imbalances. So there's this reductionist, simplistic approach that maybe we could start to, you can sort of expand it out, about people going 'I have got this mood imbalance. I just need to take some supplements to balance my neurotransmitters.'

**Dr. Jess Armine:** Your point is well taken, but I'll let you ask the questions and then we'll build it up for the base out. Because, you obviously have a sophisticated audience and remember that no one's gonna be impressed that we as health care practitioners can pronounce polysyllabic terms and know the pathways.

It's your ability to explain it, Albert Einstein said, "if you can't explain it to a 6 year old, you don't know it well enough."

So it's important that you understand the overview and understand that there are root causes, downstream effects and how they can bounce off one another. This way, you don't get into the situation of I'm going to take this whatever it is, and that's going to fix the problem, because that's never the way it works unless it's a very acute problem.

There is a difference between considerations of how one treats an acute problem versus how one treats a chronic problem. The acute mindset is to say, I will take care of the root cause and the body will take care of itself. Which is to say, if you get strep throat, you have nothing else going on and your doctor very, very reasonably gives you antibiotics. You take the antibiotics, you feel rubbish for several days, is rubbish the right word?

**Niki Gratrix:** Yes.

**Dr. Jess Armine:** I have to bring out my British and American dictionary, that's like wait, I'm using the wrong word here. And usually for a few days, you feel pretty bad, and then you turn the corner, that's your body resetting itself. That's for acute conditions and all medicine treats that mindset.

When it becomes chronic that doesn't work because the ability of the cell to heal itself has been impeded to the point that it simply doesn't. And using the principles of acute care medicine does not heal the person with a chronic illness. This is why people with chronic Lyme disease are being told that Lyme disease can never be cured. Because the mindset is let's kill the bugs, you can kill the bugs as much as you want. But if the cells are working, they will continue to have symptoms or they will recur with very little impetus.

So this is steeped in very deep science right now. I mean, Dr. Robert Naviaux, who is the MD PhD at the Metabolic Mitochondrial Disease Centre at the University, Southern California Medical School. He wrote the cell danger response paper, which explains how a cell is injured and how a cell resets itself. He wrote another paper showing that if you use the acute care mindset in a chronic condition, you actually hurt somebody because you got to fix the stuck cell danger response. Anyway, go ahead and ask your questions, because I'll go off for hours, I can cure insomnia with the amount I can talk, I fix my insomnia, it's alright.

**Niki Gratrix:** Dr. Robert Naviaux is one of these geniuses of our time. We'll have to have a separate piece just about him, he doesn't do public speaking, so not this type of public speaking unfortunately, he won't do interviews. But so let's just talk about in your experience, in my experience with neurotransmitters, it's something which we want to address later. I could be wrong and I'd be very interested in your experience.

Maybe we can talk about some of the main ones, what are the symptoms we'd look for? For example, if somebody potentially is low in them, but where would you start as a clinician? Because we could maybe touch on some of the big things we need to consider about why a neurotransmitter has gone out of balance. If I present to you, do you assess symptoms of neurotransmitter imbalances when you take someone in?

**Dr. Jess Armine:** There's a principle that was put up by, oh gosh, this saying is, if you listen to the patient he's telling you what's wrong. Sir William Osler, who is one of the founding fathers of Johns Hopkins Medical Center, said that in 1895, we have since forgotten that.

If you want to cure anything, my best joke is that in real estate, its location, location, location. In medicine, it's history, history, history. You take a good history and you know what clues to look for, which you should if you're a clinician, that's your job. Then you're going to find out what's wrong.

I have a lot of people who can't afford testing. That's how I started, I learned to do this stuff empirically. So you start with a good history. So when it comes to neurotransmitters, we tend to think about mood disorders.

So let's talk real fast, what is a neurotransmitter? It is a chemical compound that takes a message from one neuron to another. Neurons are not connected; they have a space called synapse. So when there's a message coming down? The guy in the hardhat at the end says, I need some serotonin, or I need some dopamine, I need some serotonin. And the storage area comes down, releases what the guy wants, because if he doesn't release it, it could be bad.

You know things can happen, you know things. So, yes, I'm from Brooklyn, I know you guys love the Brooklyn accent and I spent 30 years getting rid of it. And then I go to the U.K. which I do two, three times a year. And they're like.

**Niki Gratrix:** Go on, go on, do it.

**Dr. Jess Armine:** Okay you really want me to talk like I'm from Brooklyn because that's where I'm from. Okay, what are you going on about? Yo, I'm Sicilian, so, you know, we don't call the cops. We call the family.

**Niki Gratrix:** Yes. Very good.

**Dr. Jess Armine:** So, my friends are like, Jess you're not professional enough, you keep joking. I say when you get my results, you can talk to me now get out of my face, you know?

So a neurotransmitter comes from those storage vesicles, goes into the synapse, goes to the receptor and lets the, whatever the messages propagate. Then it pops off the receptor and that neurotransmitter, which can be serotonin, dopamine, epinephrine, norepinephrine, phenylethylamine and three hundred more, including histamine, including nicotine, stuff like that.

Well, let's talk about the main ones that pop often does one of a few things. He hangs around with his buddies for a while or gets broken down usually by COMT, catechol-O-methyltransferase. When I see something fast, ignore it, because like I said.

**Niki Gratrix:** Doesn't matter.

**Dr. Jess Armine:** Is not important, it doesn't matter. It gets broken down or we have a re-uptake mechanism that brings it back into the act so it can be reused. When stressors hit, there is a greater need for neurotransmitters.

So those storage areas start emptying out and we have enough neurotransmitters and we have enough to work with. After a little while if the stressor is a constant and what you mean by stressors, I mean those can be microbial, those can be viral, those can be parasitic, those can be fungal, those can be psychological, emotional, spiritual stressors, they can be toxins. They can be a whole mess of things, they're all called stressors and after a little while, the storage areas, the vesicles, are the storage areas.

By the way, you can hear me hit this once in a while because I'm Italian and I have to talk with my hands. If you want to shut me up, just tie up my hands, right?

**Niki Gratrix:** Yeah.

**Dr. Jess Armine:** It's the way it is, I'm talking about. So as they lose the levels in the warehouses. You get this optimal looking activity and you don't have symptoms. And when those vesicles are completely depleted, then there's two little neurotransmitters in the synapse, and you get miscommunication and that's when you get symptoms, so it's gonna be pretty far along. The medicines, like the reuptake inhibitors, SSRI, Prozac and things like that.

What they do is prevent some reuptake of serotonin in this case, giving you optimal looking activity for a while, but doesn't do anything about the production of serotonin. So those are doomed to fail, so when it's finally gone, there's nothing to re-uptake. And as my mother would say in Brooklyn, "if you ain't got it, you ain't got it." Seriously, if you remember this, if you listened to stories you'll understand this. So various neurotransmitters, high and low can give you different symptoms.

But I have to point out before I start saying this, that what we're mostly concerned about is depression, anxiety, OCD, ADHD, ODD oppositional defiant disorder. Of course, the more serious things like schizophrenia and stuff like that. Autism spectrum disorders, these are all neurotransmitter imbalances for loads of different reasons. Because the way that we express our moods are through neurotransmitter imbalances or balances. And you have to realize that, and listen to this one closely that we'll use depression.

Depression can be caused by any kind of imbalance, at first they say an antidepressant and they give you SSRI, it's not only serotonin. So anybody who's been down this road realizes that most doctors will listen and say, when you're depressed, here's an antidepressant, which is usually a serotonin reuptake inhibitor, doesn't work. So they double the dosage, that doesn't work. So switch to another medicine, which is still an SSRI maybe more specific,

doesn't work, does work again. So now we're six months down the road, you're trying different medicines and all of a sudden it's like, let's try something like Wellbutrin, which is an SNRI and SDRI, which raises dopamine and norepinephrine and eventually you're going to get the combination that helps that person. If you tested the nerve transmitted, you'd see what the balance is, you know where to start, if you're going to use medicine.

The fact is that the expression, depression, anxiety, A.D.D. comes from different and can come from many different neurotransmitter imbalances. Hence the reason why certain A.D.D. medicines which stimulate the adrenal glands amphetamines work with some kids and not with others, it depends on the imbalance. A.D.D. which is attention deficit disorder, in an adult even, not the ability to focus comes from two basic reasons. One, a lack of phenethylamine and norepinephrine, which is the easiest thing to fix or their mind is moving so fast that they have the attention span of a gnat.

Two different pathologies have the same expression.

**Niki Gratrix:** Very interesting.

**Dr. Jess Armine:** History will tell you the difference and of course if you know how to read the testing, doing a test is easy, interpreting a test is hard. Because you got to take a lot of things in consideration.

So when somebody says can you read my test, you can read your test, you can read the numbers, but you gotta put the patterns together and say, Ah this is what's going on. I'm saying that people can't do it, I'm just saying that they have to get away from the pill for the ill, or this will take care of that. Because anything can do it, too little magnesium, too little calcium. Mood disorders are complex things in and of themselves and need a lot of considerations. So neurotransmitters are one really quick consideration.

What do you look for? Well in history you just take literally history. See where the depression started or where the anxiety started, was it as a result of a bug bite? Just listen for the correlations. Did you take a fluoroquinolone antibiotic like Cipro or Avelox, or ciprofloxacin, or floxacin? That's one of the things that, one of the rare complications of that but boy, does it, when it crashes it crashes you pretty big time.

Listen for the progression because what happens is once you have something that imbalances your body. Let's say it develops leaky gut syndrome, which is going to start increasing your inflammation, which is going to affect your neurotransmitter system. You can start listening to the temporal relationships and find out, this is what started it. Either you get a test for it or I'm going to treat it empirically and what could possibly have happened, what are the probabilities in the neurotransmitter realm that will give you these expressions? So in the prefrontal cortex, which is your executive area where you think all the logical things you do, you have somebody who has impulsivity, lack of forethought, stuff like that and everything you call a teenager.

The reason teenagers are, shall we say, teenagers, let's face it, we've all had them. Oh, my gosh, why did you do that? I don't know. What do you mean you don't know? I don't know. I mean come on, give me a break. It's because their prefrontal cortex's don't develop

completely until they're 25. But epinephrine, norepinephrine and dopamine kind of run that area and the anterior cingulate, which is your flexibility and this is where ODD and OCD come in, that's run by serotonin, the basal ganglia is the home of anxiety. And we have two sides and they can express differently where you have internal anxiety, that's more being very depressed, very self-injuring.

Where external anxiety would be homicidal thinking, that person yells a lot, that's really external anxiety, anger, yes, but external anxiety. Either way, serotonin is a guy who's the primary. So you start listing these symptoms you like. Hmm, I can figure out right from here what things are imbalanced. Depression was in the limbic system and that system kind of sits over the cribriform plate and that's where you have your emotions, how you tag your emotions.

So we've all been in a situation where a certain thing happens and we put a particular significance on it. And if there was a smell involved, like a cologne or a perfume or something every time, or even if you remember being in the forest or in the camp when I was a kid, it smelled like this. Why does that happen? Well, those molecules that you were smelling at the time went up through the cribriform plate and so you're um-hm, over here, and get distributed in the limbic system and they get associated with that emotion and guess what? Every time you smell it, you get the emotion again, but you need serotonin to run in that area. So a lot of the imbalances and then we start getting into the temporal lobe, which gets a little crazier. And those imbalances, if you just listen to the symptoms, you can figure out some of the imbalances.

But I guess what I want everybody to understand is that whatever symptom you're expressing can be several different imbalances. And one has to not only think about the imbalances, but think about what caused them and what can cause them? Well, infection big time. Because infection creates things called pro-inflammatory cytokines and we're all talking about the Covid-19 now, and what people die of is a cytokine storm if anybody is really scientifically interested. We're talking IL-6 and IL-17, don't worry about it. And by having a system where that can be allowed to go crazy, then you have just as big buildup of inflammation and it affects all the body systems.

This can happen from infections, it can happen from toxins, it can happen from abuse, it can happen from PTSD. And remember PTSD doesn't have to be a single event like a rape which destroys women right at the core. Remember, rape is an act of violence not act sex and it's a complete loss of control.

What happens in soldiers? Picture being in a foxhole and people firing weapons over you and they're going to crawl into your foxhole and kill you, and you're like this and you've total loss of control. A woman who has been sexually assaulted has the same destruction of the psyche at the basic level. But continued abuse, a child has been raised in a non-nurturing environment. Remember that children may not be able to express what they see, but they feel it, babies feel what you're doing.

I was an A & E nurse for a long time and one of the things I learned that I used for my forensic work is that if I saw a family come in and I suspected abuse, I watched who the child went to because that was the abuser. Remember little Johnny, if you're hitting them,

thinks that he's a bad boy, so you must be hitting him for that reason. So he's always trying to satisfy the abusers, so if you want to know who the abusers are, just watch who they're running to. They don't run to the nurturer they run to the abuser and it's a horrible thing to watch, it really is.

**Niki Gratrix:** Yes. So just to confirm that's a big topic on the Summit, as well trauma isn't just a single discrete event it's also, it could be emotional neglect. And what we're saying is that that can change the biochemistry and knock the neurotransmitters out downstream.

So it starts at the emotional level and can hit the biochemistry and then what's interesting is that then the biochemistry changes to change the emotional state even more. And then one feeds back.

**Dr. Jess Armine:** Exactly.

**Niki Gratrix:** So we have this mind body. And I just wanted to really make that point to people.

**Dr. Jess Armine:** Good. Good. I want you to. That's great, wonderful.

**Niki Gratrix:** So people will address neurotransmitters as well. To me it's an area that can really help if you really want to get your neurotransmitters sorted out, do the psychology side for trauma. But look into this as well.

**Dr. Jess Armine:** We call it a safety pin cycle. We used to do chiropractic where ulcers would cause pain in the middle spine because it created the subluxation. So if you treated the ulcer, but didn't treat the middle spine. The middle spine would create the problem again and it worked back and forth all the time.

Same thing here, you're exactly correct, how many people have had these issues or having physiologic symptoms which is depression, anxiety, there were physiology symptoms. They go for therapy and I always hear, well, it helped, but it didn't last or didn't help at all. Then we have to figure out if it's the right therapy. But you have to do with the mindset of, well, we have to combine things. If you don't, it doesn't matter how much therapy you have.

If you don't have any serotonin in your system, guess what? You're not going to get it by eating turkey. Yeah, if you eat two turkeys a day for about a year and a half, you might get enough serotonin. But it has to be right, it has to be elevated in real time.

And the other side of the coin is when I'm treating somebody who I know through history has had a lot of trauma, but they've never really dealt with it. And this takes a little bit of legitimize as a clinician, you'll deal with the physiology, but there will be a point where you have to look at them and say, well, the reason this keeps happening is because it's running down, it's like Chernobyl.

There's an atomic pile still going in, where they put all kinds of concrete and it's going to crack and the radiation is going to come out in different ways. So you can have different kinds of symptoms, you're not going to be related to the traumas that you've had. And I may



have a degree in psychology, but I'm not a psychologist. I understand relationships and I explain that's my patients, look, I can turn you onto people who will treat you very, very well. And yes, they won't tell me what's going on, but trust me, if they treat you badly, I will know about it and they know I will show up at their door.

Nobody treats my patients badly, it would be a bad thing. You know, things can happen, you know things. And they know too, he will show up at the door. But he's in America, he'll fly, and I love to fly, don't worry about it, he's got ways. If he shows up at your door, he's not going to be happy or one of his friends without necks, he's gonna show up at the door and say, hey, the doc told me I gotta do something with you because you're treated Mrs. Jones badly. You don't want this to happen because it could be bad, you know? And seriously.

When I take on the case I'm the old type practitioner that I take complete responsibility in patient advocacy. I like to call myself a specialist in chronic illnesses which is what I do. But I'm really like a generalist in that I make sure that everything is coordinated because most people need that, especially when they're very ill. They go to their GP who's very limited, especially in England and most places on what they're actually able to do.

**Niki Gratrix:** Yeah.

**Dr. Jess Armine:** And specialists are only interested in their particular specialty, which is the only reason you should go and see anyway. You go see a gynecologist, you don't expect them to be an orthopedist. You go to see an orthopedist, you don't expect them to be an internist. And you go to see a specialist because you need somebody in their specialty not to be a generalist. Unfortunately, nobody's talking to each other and the generalist is not coordinating properly.

**Niki Gratrix:** And that's very confusing for clients as well, so it's a brilliant service that you're giving there. So just tell me when you're looking at symptoms and let's talk about testing for a second.

How do you actually assess somebody's neurotransmitters, the history, symptom analysis and what type of testing do you actually do? Is there anything that's valid out there?

**Dr. Jess Armine:** Yes, I want you to understand something about testing, and when I'm lecturing. Half of my week is teaching doctors, which, by the way, is so difficult. And the other half of my week is treating patients.

When you are assessing neurotransmitters you have to realize that you're not assessing the central nervous system transmitters completely, it's a combined peripheral and central nervous system. So you don't look at it as an exact number you look at the pattern because what you're looking at is biomarkers.

Now, there's a ton of research out there for. Excuse me. This always happens, you know, especially when what you're looking for is not the exact numbers, but the pattern, if the dopamine is high and the serotonin is low. Well, if you want to control that and you know that serotonin counterbalances dopamine you just bring this up and that'll come down, but it's not an exact number and you have to look at it as generality.

So you look at the testing and you say, how does this correlate with the symptoms? Because I've had some things that are like way out of whack and I'm like, it doesn't correlate with the symptoms, it's either a lab error or something else going on. But whether you use urinary neurotransmitter testing, organic acid testing and I'll explain the difference between all of them, serum neurotransmitter tests or platelets, you're getting biomarkers. The only way to get true neurotransmitters would be to extract cerebral spinal fluid.

**Niki Gratrix:** Right.

**Dr. Jess Armine:** You don't want that, unless you've got meningitis you don't want anybody putting a needle in your spine and I'm certainly not going to do it, a bad thing. The serum tests that you get from your doctor are good, except the reference ranges are a little strange. I'll give you one that makes me always laugh. In one of our labs here, zero to 140 is considered the reference range for dopamine, which begs the question, is zero dopamine okay?

No, it doesn't tell you much. Two basic tests are very, very good. Either urinary neurotransmitter testing from someplace like Labrix or Doctor's Data Institute and there's a few other places which actually tests the actual neurotransmitters in the urine, and you see them on a scale. And there's a place in Australia called NutriPath I think labs do the same thing.

Or you can do organic acid testing, organic acids, usually from either Genova or Great Plains laboratories. What they test are the organic acids, which are the result of cellular metabolism. So they're not actually testing dopamine, they're testing homovanillic acid, which is HVA. If you look at the pathway, dopamine will go down to HVA it passes by COMT, MAOA and it needs B-1, B-2, B-3, SAME and magnesium to run it. So if you have a low HVA you're really not sure whether it's a low dopamine or a lack of those co-factors in the pathway. If you have a high HVA, well then you can almost, you can presume it's a high dopamine because it's only one reason for it to be high. Same thing with VMA which kind of represents epinephrine, norepinephrine. They test for 5-HIAA, 5-hydroxyindoleacetic acid, which is directly a result, if you look at the pathway, if it's a serotonin, it goes directly to 5-HIAA.

Serotonin will also become melatonin if there's enough B-5 and B-6. But you can make a pretty good presumption if the 5-HIA is low, then your serotonin is low and you have to ask the question why? And with an organic acid test, you're going to get a few little markers, one of them being quinolinic acid. If you have a lot of infection or inflammation your tryptophan, which becomes 5-hydroxytryptophan, then becomes serotonin and then breaks down will be stolen out of the pathway by a different enzyme called IDO. And when it steals the tryptophan, it creates this quinolinic acid, which is a heck of an excitotoxin.

So here's somebody who's got a lot of infection, who's got loads of dopamine, epinephrine because they're being stimulated like heck and their serotonin is supposed to counterbalance it and calm them down. But the precursor, the thing that creates serotonin is being stolen out of the pathway to create another excitotoxin, so oh my God, the back of their heads blown off. But if you see a high quinolinic acid and a low serotonin and the other

guy's way up there, you say to yourself, this person got an infection and that's the reason for this all going on. So let me help counterbalance, let me get them some 5-hydroxytryptophan, bring the serotonin up.

Let me help the neurotransmitters in the short term and fix the problem, which is the way you have to look at it. That's interpretation. When you look at the pattern, you have a history. You can sit there and go, okay, this is what's going on. How do you fix neurotransmitters? Well, some basic stuff and more advanced stuff. For instance, if you're sure you have a low, if any neurotransmitter needs iron and most of the B vitamins. BH-4 which is tetrahydrobiopterin. You can get a supplement, but if you're getting your vitamins and minerals that are going to get into the cells, big if, and you're getting enough iron and so forth.

Your neurotransmitter system has all the factors that it needs to work. Now, the next thing you have to make sure is that it has the substrate. Meaning if you want to raise phenylethylamine or norepinephrine because somebody's got A.D.D., you can start out with the l-phenylalanine, which will preferentially create phenylethylamine and then it creates tyrosine, which then creates L-dopa, which then creates dopamine and then norepinephrine, epinephrine, and all the other guys.

Sometimes it works really well if you want to raise forebrain arousal so they can pay more attention. Trick, do it slow, really do it slow. If you're working with adults you do it slow. Kids, you have to use quarter doses to begin with because if you're wrong, what's going to happen is the symptoms are going to get worse.

And if you start off slow, you can back off easily and nobody's hurt.

**Niki Gratrix:** Yeah.

**Dr. Jess Armine:** For serotonin, if you give them tryptophan, it might be stolen out of the pathway. So if you use 5 hydroxytryptophan, you start slow. And my usual recommendation is 50 milligrams a day even though I may end up 400, I'll give you 50 milligrams a day and they come like that. Question I get all the time, I'm going to address it right here, can taking 5-hydroxytryptophan give you serotonin syndrome? Which is a very life threatening dangerous syndrome. No, the only way you can get serotonin syndrome is overdosing on SSRI.

There's two studies out there that address this. One is that people who read the studies say that 5-hydroxytryptophan doesn't do that.

The second study they did on one dog, if I catch these people I'm going to get them. I don't know what they did to that poor dog, but one dog, I like dogs, are my best friends. You know, boys and dogs. You know, boys and dogs, girls and horses, boys and dogs. Boys and dogs get along because they think alike. Okay. You see a boy and a dog, they look at a puddle, they look at the puddle, they look at each other, look at a puddle, boom right through the puddle. And then they go home, mom starts yelling at them and they look at each other and say, he made me do it.

Now, I've raised three boys, I can tell you with authority that if you scoop out a dog brain and scoop out a boy brain and exchange them, you'll see no difference in behavior. They look alike, they smell alike, they act alike and that's pretty cool because like, how are you doing? Okay. They come into my house, my kids when I was back in Philadelphia, like "what have you got to eat?" I'm like, "you're 40 years old." And the dog like, what have you got to eat, it's like they're always the same, become 13 again.

I used to barbecue and they used to sweep stuff off the barbecue, what's going on, man? There's nothing on here. Like, what else did you get? But let's face it, boys and dogs is just what it is, it's true. The reason it's funny is because it's true, you know?

**Niki Gratrix:** Yes.

**Dr. Jess Armine:** And of course, I lost my train of thought.

**Niki Gratrix:** Okay, well so that's great. I wanted to ask you, with a complex case, let's say somebody shows up and let's say they have Lyme, they've got heavy metals and that's linked with why they've got some Lyme, bugs going on. And maybe you establish they probably got some gut issues going on, and you know, they've probably got neurotransmitter imbalances. So they got to come with that bundle, as most people do.

Would you tend to leave addressing neurotransmitters in that bundle to later, or would you sometimes bring that in early to help the person? If somebody had serious gut issues, heavy metal toxicity and Lyme, for example?

**Dr. Jess Armine:** Okay. Let's go with that. You have heavy metals, Lyme disease and gut issues which, you know are going to end up in nourishment or imbalances?

**Niki Gratrix:** Yes.

**Dr. Jess Armine:** And that person comes in with what symptoms? What's affecting their life the most?

**Niki Gratrix:** They probably could be pretty bad like chronic fatigue and they may not be able to work anymore because it's got really bad. Yeah, it's quite a moderate to severe.

**Dr. Jess Armine:** Okay, great. So let's talk about severe fatigue. Now, what I would do in a case like that, given all those things being true, given the fact that I have enough information to start working. If they have insomnia, which a lot of people do, and or they have a lot of anxiety. I'll fold in some of the neurotransmitter stuff immediately.

Why? Because if you have a lot of anxiety, what's going on? You're having a constant fight or flight reaction. You're like this all the time, well fight or flight is not a benign thing it's affecting the entire endocrine system. So if I can calm that down primarily, I'm going to start getting ahead of the curve.

At the same time, I'll start fixing the cells, which is to give them vitamins and minerals that are capable of getting into cells, usually in a liposomal form, give their bodies what they

need to reestablish their cell walls, which are usually the fatty acids, either omega 3s or for the most part I start with phospholipid stuff, because that gets in directly. Making sure now that they start fixing their guts because most people have leaky gut syndrome and that's the reason for inflammation. It is the poor breakdown of food that is getting past the barrier and then the immune system starts working on it.

So if you can shore up the barrier, those aren't going to get through and you're going to drop inflammation by definition. So you got to reestablish your mucus layer, reestablish the cellular function in the gut and break down the foods. So that's the province of digestive inside.

**Niki Gratrix:** Yes.

**Dr. Jess Armine:** And reestablish your microbiome. I use something called gut butter, which kind of combines all this stuff in one tablespoon of day, because I'm really big on compliance.

So I don't like to see people taking five, six, seven, eight, nine, ten different things because anybody will do anything for two weeks, but it's not two weeks it's going to fix you. So it's what they can do in the long term. So I'm going to start stuff like that first, I'm going to get their gut sealed up because that's going to drop their inflammation body wide by about 80 percent.

And I'm going to make sure that their cells, their biochemistry get the cofactors and coenzyme is to run their biochemical processes, because those are the reasons usually that those processes don't run. So if I can get vitamins and minerals into cells and start fixing the cell walls. Even if I did nothing else, I could get that person back towards where they can start reestablishing their homeostasis. It's a clinical decision on whether you treat the bugs at the same time or later.

There's a lot of different criteria but in my mind, actually it's not written criteria out there, that if you sometimes if you. People think, well, if you don't kill the bugs, you're not going to fix that leaky gut. And then I'll look at and say, well, you start killing the bugs, you're gonna raise the toxic level so high that you're gonna put them in hospital, which do you prefer?

Some practitioners give people anti-microbial and they start getting die-off reactions and say, you just have to go through it. Well, you're not suffering with them, you're now sitting in the day by day suffering with them.

So get off your high horse, get out of your ivory tower and think about the patient. So it's a clinical decision depending on what they're most bothersome symptoms are. If it's anxiety and depression, I'll fold some of that stuff in the front end, especially insomnia. You don't sleep, you don't heal.

**Niki Gratrix:** Yep.

**Dr. Jess Armine:** My sainted grandmother, I have Nanna's axiom. If you sleep and you poop, everything will be okay, it works, it's true. You sleep, you're going to heal and most people

aren't sleeping. If you have a digestive tract working, including what goes in, what gets digested and what goes out. You're going to take that big burden off your immune system and it's going to start working again. Now, some people I have to treat the bug simultaneously and I just do it in increments, it's a clinical decision. But generally speaking, I would fix the cells, the gut usually neurotransmitters because I'm usually looking at insomnia and then I'll treat bugs.

**Niki Gratrix:** Yeah.

**Dr. Jess Armine:** And what testing do I use? It depends what the person needs. I like to do targeted testing, but if you have to throw out a net. In England they have a functional diagnostic test which is called FDX, which is a very, very extensive blood test that goes into a program that is just absolutely phenomenal. And I know the individual who created it and he's one of the smartest men that I've ever met.

The organic acid test is a very good one, again, it requires a lot of interpretation. I like the one from Great Plains Laboratory but the one Genova's good also. And then there's targeted testing. You can do neurotransmitter testing that includes the cortisol levels, a single cortisol is worthless. And that happens a lot in medicine they do a morning cortisol, so what, you need to see how it fares during the day, so you need at least four for them. The testing for the various pathogens can go from the ridiculous to the sublime. Lyme disease testing, oh my gosh. The NHS, I'm sorry I wouldn't trust any of their tests for that area.

**Niki Gratrix:** Yes.

**Dr. Jess Armine:** And let me tell you why and this is true here also. The test called The Western blot, tests different bands which are weighted bands and killer Daltons, don't ask me what that is. And in order to show positive the patient's band level of antibodies has to be 60 percent or more of the example. So you can have 15 bands and it could be 55, 55, 58, 55, 45. In other words, it all shows antibodies, but it will be reported as negative.

There are places in the United States like India Labs in New Jersey and IGeneX, although IGeneX is too damn expensive and in ArminLabs in Germany, that will show you the levels. So if I'm looking at a set of bands and they all have various levels of antibodies, even if it's not positive by CDC criteria the person's got Lyme disease.

**Niki Gratrix:** Yeah.

**Dr. Jess Armine:** And you have to know which ones, that maybe if it's just 41 that may mean that they have one of the co-infection like, Babesia, Bartonella. These guys get into the nervous system and stay there if you don't treat them. And they will rear their ugly heads twice a year so they can replicate and they're not easy to diagnose, so you have to have a high level of suspicion. There's two things, three things, four, sorry Monty Python.

There's actually three things that are the biggest challenges we face. Aside from the Covid-19 right now, which is a big deal and should not be ignored.

**Niki Gratrix:** Yeah.

**Dr. Jess Armine:** Okay. But outside this particular pandemic we're having, everybody should stay safe, it will pass.

**Niki Gratrix:** Yes.

**Dr. Jess Armine:** What we have to do is just hang in there. The three things that are affecting us most are tick borne diseases, Lyme disease and so forth, candida, and parasites. You guys probably know that I do live blood cell analysis and I train a lot of people in England to do it. You can see in the microscope and it's projected on the screen. You can see candida, you can see it, its there staring at you.

So if I'm looking at a drop of blood and every time I move that slider and I'm seeing four or five candida cells, how much is in that person's body? And of course, if they drink alcohol they get really sick as opposed to when they were younger, that just tells you the alcohol's turning into acid aldehyde and you can't get past that aldehyde stage.

It's like formaldehyde and candida produces a lot of acid aldehyde. So that pathways are blocked up. So by seeing that asking a question, you'll know what's wrong, you'll know what you're seeing is there. And what has been ignored because the testing is so horrible, have been parasites.

**Niki Gratrix:** Yeah. I would throw in the hat list that you had. Sorry I had to jump in because you were saying some really interesting things. I would probably put some actual heavy metal, chemical toxins, throw that in because they usually go hand-in-hand don't they?

**Dr. Jess Armine:** You're absolutely right. You're absolutely correct.

**Niki Gratrix:** I guess trauma and emotional stress that lowers your entire resilience and makes all of those exposures to those things worse as well, so that we're less able to deal with it.

Actually I wanted to ask you something as well, just in relation to this Coronavirus right now, where they're saying healthy people are catching it. And I just wonder if there's this subclinical level of heavy metal, a little bit of parasites, some Lyme which conventional medicine would never have addressed or certainly wouldn't diagnose. And these people are being knocked down more, because they actually have imbalances that are so prevalent and not recognized by conventional medicine. I was just throwing it out there because I think that it's scaring people but actually, do you see the point I'm making?

**Dr. Jess Armine:** Yeah. The point if I could repeat it, what you're saying and very, very, very astutely is that the presence of subclinical issues that maybe and maybe not expressing before this. For instance, you may have a candida overgrowth, you have parasites, you have heavy metals. These things all contribute to the cells inability to function heavy metal specifically, because they will knock down mitochondrial function and your mitochondria is what builds, gives your energies, your cell energy to work. Realizing that you have 30 trillion cells in your body, you have two hundred to two thousand mitochondria per cell, you do the math.

So if mitochondrial function is knocked down, your cell is not going to heal. Within that function, heavy metals will interfere with the biochemical reactions, leaky gut, leaky cells, leaky brain, which is the book that Elizma and I wrote which is available on Amazon, for I think seven quid, explains all this stuff. Because if you have leaky membranes in the mitochondria, the protons that run the factory that produces ATP are just gonna get out. And that factory is going to slow down, slow down, you're not going to produce ATP, your cells going to die. But it's relative, it doesn't just die it has dysfunction for a long time. Why do heavy metals, how can you get them?

Well, of course, you could be chewing on mercury, if you like that. You can have, fillings and so forth. But the real reason is because of that stuck cell danger response, because the cells will normally get rid of small amounts of heavy metals. So if that's not working, you're breathing, hopefully and every time you're breathing, you're breathing in the gases that are in the atmosphere. And if you happen to be in a city that includes petrol, that includes everything that's in there, including heavy metals and little by little you develop this burden. How can you tell?

Well, if you're doing hair mineral analysis or urinalysis, if you look at it and a lot of them are just kind of bored line high and so forth, there's not one that's crazy. You're heavy metal burdens coming from the lack of cellular function. Sometimes you'll see arsenic way up and sometimes that can come from chicken, that can come from rice usually. Okay here's the mercury way up. You have to ask if the person's got a lot of fillings or did they recently have their mercury fillings out? Because no matter how good you do it you're going to get mercury hit, it's gonna stay in your system for a while. Or do they take a chelating agent, trying to chelate. Using parsley or cilantro that's pulling it out but it's not binding and that's what's making them sicker. But you'll see it there because it'll be an anomalous reading. Then you just have to ask questions, so you're absolutely correct.

**Niki Gratrix:** Yes. So to your point then, it sounds like I think one of the things from what you're saying is that list of those things we said like the parasites, like heavy metals, all the gut issues, these kinds of main stressors that we have.

They are things that we need to look at, whether somebody has a mood disorder or whether they express full-blown chronic fatigue, Lyme. It's these same issues isn't it? And they're usually subclinical and they aren't recognized by conventional testing most of the time and these are the core things.

So it's not so simple as just to think, oh, I'll just do a neurotransmitter test and take 5-HTP and that will correct my serotonin, it's a little more complicated.

**Dr. Jess Armine:** Here's the thing. You're correct, it is very complex but what I'd like your listeners to understand is that if you do the basics, which we call foundational treatment or bio terrain treatment.

Which is good water, good air and in this particular time, when we can't get organic food everywhere, you make your best choices.



You look at frozen vegetables because frozen vegetables are picked at their peak, flash cooked, flash frozen. Believe it or not, they're probably better than fresh vegetables if you can't get your hands on it, and yes, there are organic frozen vegetables. And even if you can't get organic, you make your best choices. If you can't get organic meat look for kosher meat. Kosher means more organic than organic, because believe me those cows were raised in very strict conditions, they're not given junk and so forth. Yes, it's more expensive, but you have a family to feed. So you make your best choices to vary your diet as best you can. And the thing you need to do for everything is make sure you're getting absorbable vitamins and minerals, getting a reasonably good diet, reasonably good food, reasonably good air, reasonably good water, which can be just a Britta filter if you've got nothing else. That takes out a lot of junk and is not very expensive.

And if you have a family and you have one income or your incomes dropping off and you're looking to take care of some of this stuff, maybe a simple filter without getting really ostentatious will be very helpful. Because, yes, you'd want to take care of the shower water and stuff, but it's the water you're drinking that you're putting most of the stuff in.

You can decrease your exposures that way. And the biggest thing that has to be managed is fear. Fear is what turns off your immune system. Yes. I can quote scientific studies from here until the cows come home, is that an American phrase?

I joke about everything I told you. But fear is what kills people. Stay off the news. Believe me, if they need you to know something they'll let you know. If you walk outside and all of a sudden the National Guard or the army is there, they're not there to hurt you, they're there to make sure civil order is maintained. They're there, especially the states here, to deliver food.

Nobody's quarantined to the point where they're going to be arrested if they walk out. If you're stupid enough and you're uncaring enough to gather in groups, then they should have the right kind of breaking up right now. Because you may not get ill, but the person who you're talking to will get ill. Wear a mask if you're talking to people, you don't have to wear a horrible mask, do your social distance, do it for other people as well as yourself.

Have some social responsibility, but fear is what will kill you.

So stay away from Mr. Trump, oh, my God. It's like the joke I have about lawyers, how do you know lawyers, solicitors lying? His mouth is moving. I mean, really, you know, you have to be careful who you're getting the information from. Because there's a lot of people out there trying to sell you something and there's people out there pontificating like crazy or they're concentrating on vitamin D.

Look for a more holistic approach, but stay away from the naysayers. Go on YouTube and type in corona parodies, okay. People are making videos, you'll laugh your bums off, I swear. The studies were done a long time ago and it started with a gentleman whose name I don't remember, I apologize. But he had a chronic deadly illness and cured by laughter.

**Niki Gratrix:** Yes.

**Dr. Jess Armine:** What he did was he was watching Three Stooges movies and he found that with a good 10 minute belly left, he was able to sleep something like six hours, I may be paraphrasing. Fact is, that's how it started.

**Niki Gratrix:** Yes.

**Dr. Jess Armine:** So laugh, you can laugh. Play with your family. Remember that your children take you as the key whether they should be frightened or not. My colleagues and my patients take the cue from me and I tell them the truth. I don't lie, I never lie. I tell them the truth and I do enough research so they know. Okay, doc, what you think about this? I don't think this is going to be helpful because. And with all the stuff out there, most people will say, "okay, thanks for it." Because I've done the research. If something is complete nonsense, believe me, I'll let you know about it.

There was a chiropractor saying that "they had a patient with the Corona virus in 2006!" This is not that Coronavirus that was SARS from 2003. It took me five minutes to find it and you're trying to put out this conspiracy theory and what good is that gonna do? You could talk about 5G. Yes. We'll find out about it later. Why are you worrying about that? Circle of control, circle of influence, circle of concern, stay in your circle of control. Maybe your circle of influence, neighbors, stuff like that.

Your circle of control and things have no control over and that's someone causing you most of your angst, most of your fear. Stay away from it. This will pass, do the reasonable things, take care yourselves, take care of your families.

**Niki Gratrix:** Okay. Thank you so much Dr. Jess, that was so true, such a great thing to end on as well. Because that not only applies to the current situation, but even if this situation wasn't going on.

Worrying about symptoms, being in fear about it, getting stressed and overwhelmed about everything. That will literally switch on the cell danger response and will turn off your cells and stop them from working, and our lovely Dr. Naviaux confirmed that.

So tell me what your website is, so where can people find you? And also the full name of the book, the title of the book that you've written about a leaky brain?

**Dr. Jess Armine:** Well, my website's easy, [MethylationSupport.com](http://MethylationSupport.com). And I do offer a 30 minute complimentary consultation, which you can get there and just schedule it if you have a chronic illness and you don't know what to do.

This gives us an opportunity to do two things. Number one, I want to know if I can help you or not before I offer you anything.

And two frankly I want to know we're gonna get all along. It doesn't matter where you are in the world, I have a worldwide practice, but half my practice is in the UK, but that's always available.

The book that I wrote with Elizma Lambert who is a naturopath in Australia and one of the most brilliant women on the planet. I know she was my student for a couple of years and now she's like, way exceeded me, I feel she's like Darth Vader. You know, I once was a student and now I'm the master. It's called *Leaky Gut, Leaky Cells, Leaky Brain*.

**Niki Gratrix:** Wow.

**Dr. Jess Armine:** And like I said it's on Kindle. You can buy it, the printed book but the Kindle version I think is seven quid and even in Japanese, it's all over the world in Germany here and there.

And basically the book goes into what a leaky cell is, and we wrote it to be that borderline between anybody can understand it, and just enough scientific evidence for those who are scientifically minded to be satisfied with that. It's a really easy read.

It's about 70 pages and then has all recipes and it has the gut butter recipe that really, that's what's going to fix the cells, and it's stuff that you can get, not too hard to get it.

I've got variations so that you can't get something in the UK, there's some alternate, which I do all the time because I have the Tasmanian version from Tasmania. It's a patient in Tasmania. They saw the Tasmanian version, I had this Tasmanian devil on it. I'm like, well, you can get this stuff in Tasmania you know? It has this Tasmanian devil going, rabbit sandwich.

**Niki Gratrix:** Dr. Jess thank you so much.

**Dr. Jess Armine:** Thanks so much for having me. I appreciate it.

**Niki Gratrix:** It's been awesome. Thank you so much. I hope everybody enjoyed that. Thank you and take care we'll see you all in the next episode. Take care for now.