



Neurotransmitter imbalances and high cortisol in PTSD

Guest: Trudy Scott

Disclaimer: The contents of this interview are for informational purposes only and are not intended to be a substitute for professional medical or psychological advice, diagnosis, or treatment. This interview does not provide medical or psychological advice, diagnosis, or treatment. Always seek the advice of your physician or other qualified health provider with any questions you may have regarding a medical or psychological condition.

[00:00:10] Alex Howard

Welcome everyone to this interview where I'm super excited to be talking with Trudy Scott. Firstly, Trudy welcome and thank you for joining me.

Trudy Scott

Thank you very much, Alex, for having me and for inviting me to this great summit of yours. I'm really excited to be here and to share my expertise.

Alex Howard

Great. Thank you. I'm excited to get into this because I think looking at the role of neurotransmitters, imbalances, cortisol is a really important piece, and I know that this is an area that you're really passionate about, and we'll get into this in the interview, around looking at what's happening in the body can often be, if not a cause, a key factor in what's happening in our psycho-emotional world. And I feel this is a really important piece for people to understand, because they can sometimes get very fixated on trying to address psycho-emotional things only at that level.

And I know you've got some great studies that will really illustrate what we're going to talk about. Just to give people a bit of Trudy's background, food, mood expert and nutritionist Trudy Scott educates anxious individuals about nutritional solutions for anxiety. She's known for her expertise in the use of targeted individual amino acids, offering hope and immediate relief from anxiety so other underlying root causes and dietary changes can be addressed with ease. The social anxiety condition pyroluria, which, by the way, I want to say, is an important piece for a lot of people around this, and the harmful effects of benzodiazepines.

I don't know if we're going to get a chance to get into that today but again, I read this and I go, I know some individuals that've been really important to address. Trudy is past president of the National Association of Nutrition Professionals. She was a recipient of the 2012 Impact Award and served as special advisor to the board of directors. People can read the rest of Trudy's bio, but I think it's important to say that particularly in the world of understanding food and nutrition and anxiety, Trudy, in my mind, is the go to person.

So once again, Trudy, welcome. Thank you for being here.

[00:02:23] Trudy Scott

Well, thank you.

Alex Howard

Let's start a little bit talking about neurotransmitter imbalances and high cortisol when someone has experienced a traumatic event. And I think before we come into some of the specifics, let's also just define and name what we mean by neurotransmitters and high cortisol.

Trudy Scott

So you mentioned at the beginning that there's the psycho-emotional aspect and there's the trauma. So we definitely want to be working on that. But as you said, we want to be looking at these underlying neurotransmitter changes and high cortisol.

So for someone who doesn't know what a neurotransmitter is, it's a chemical messenger. You've probably heard of serotonin. So that is a neurotransmitter that we know a lot about. And they're in the brain, they're throughout the body, a lot are produced in the gut. So if we have good gut bacteria, then 95% of our serotonin is actually produced in the gut.

And then if we've got imbalances in our neurotransmitters, that can make us anxious, that can affect our sleep, it can make us more fearful, it can cause irritation, cause anger issues. And we'll go through all of the symptoms that we see with the various different neurotransmitter imbalances. But it's something that we can address with a supplement that can start to raise those levels. And then we can start to feel better.

And then as far as cortisol goes, cortisol is a hormone that's produced by the adrenals. And when we're under a lot of stress we may have high cortisol. Now that stress could be psychological stress, it could be the trauma, it could also be something like parasites or gluten sensitivity, something that is putting a stress on the body can raise our cortisol levels and then that can make us more anxious. It can also have us waking in the early hours with a jolt of fear. It can prevent us from sleeping. And there are ways that we can address that high cortisol from a physiological point of view, to give the body some respect.

And we want to look at these biochemical factors, because when we are in a good nutritional status, so to speak, we are less prone to the effects of trauma. So if we do experience a traumatic event, we are less likely to be affected. And then if we have been exposed to trauma, if we've got a good nutritional status, then we can recover. We can use the nutrients and the neurotransmitter balancing and lowering the high cortisol to actually recover more quickly. So it can help us prevent the effect and they can also help us recover.

And the first thing that I look at when I'm working with someone with anxiety, do you have some kind of neurotransmitter imbalance? And then do you have high cortisol? And then we start unwinding everything else that might be going on. Are you exposed to toxins? What's your diet like? What kind of trauma did you experience? Are you in therapy? Are you doing something else to help with the traumatic event? But using nutrients and addressing those neurotransmitter imbalances is just so key.

[00:05:38] Alex Howard

And I think you're making a really important point here that I want to amplify a little bit, and it's a point that's thread through this conference that trauma is not what happens to us, trauma is the response that we have to what happens to us. And part of what defines our capacity to respond is the resilience or the state of our system.

Trudy Scott

Perfectly said. Absolutely right. And how we respond depends on what's going on in our body a lot of the time. It also depends on prior traumatic events, but definitely nutritional status plays a big role.

And the exciting thing, Alex, is we are now seeing more and more research that is talking about some of these biochemical factors that I've talked about. There's a paper that was published in 2020. I'll read the title *Challenges of Post Traumatic Stress Disorder in Iraq: Biochemical Network and Methodologies, A Brief Review*. And I'll just read a few of the things that they highlighted in this paper because I think it's exciting that it is being discussed in the literature. And what we want now is we want more of this to ripple down into standard of care because it's not often part of the standard of care.

But in this paper, which reviewed a number of studies, they found that there were dysfunctions in the HPA axis, the Hypothalamic pituitary Adrenal axis. I talked about cortisol to start with, so this plays a role in this area. They also talk about the Hypothalamus pituitary thyroid axis, so we can have disruption in thyroid health. They said that the sympathetic nervous system plays a role in PTSD by releasing norepinephrine and epinephrine and then cortisol release from the adrenal cortex makes this sympathetic fight or flight response more severe.

They did also say that there are gender differences that they identified in some of these studies. And they said women may be more vulnerable to PTSD because of the HPA axis. And I'm going to share a new study that came out, a little bit later, that talks about specifics when it comes to women. And in this paper, they also mentioned serotonin and dopamine levels were found to be abnormal in the presence of PTSD. So this is a very exciting study that I think supports what we see clinically.

Alex Howard

And I think it also, to reiterate the point we made a little bit earlier, that one can experience PTSD, and there's a genuine event that's happened which is overloading and the body can't respond, that it's traumatic. But then one can do a lot of psycho-emotional healing and wonder why I still have anxiety? For example, why is my cortisol still high given that state of anxiety? And it's because the impacts are not just in the emotions. There's a physiological impact that, until we address, there's not going to be that full rebalancing of the system.

Trudy Scott

Absolutely. The great thing is that, we are going to talk about some of the amino acids that you can actually use to start to balance some of these physiological impacts that we have. One of them that we're going to talk about is GABA, which is gamma-Aminobutyric acid. That's a calming neurotransmitter that also happens to be the amino acid that we use.

But before we go into the specifics of that, I just wanted to share another paper. This was actually published in 2021, and the name of the paper is, *Plasma, Gamma-Aminobutyric Acid Levels and Post*

Traumatic Stress Disorder Symptoms in Trauma Exposed Women: A Preliminary Report, and they say here, dysregulation and GABA may be a neurobiological marker or potential treatment target for women with PTSD symptoms.

[00:09:33]

Now, keep in mind when you're looking at a lot of these studies, they're not talking about using the amino acid GABA, which we're going to talk about in a second, they are identifying that GABA is an underlying imbalance in PTSD. And they're often saying, what medication can we use? But we know that there are these nutritional changes that we can do. And I'll talk about that in a second.

But in this paper, they talk about the GABA being related to dysphoria, which is a state of unease or generalized dissatisfaction in life. And they also talk about it being associated with avoidance cluster symptoms. And when it comes to trauma and PTSD, this could be something like avoiding places or activities that remind you of the traumatic event.

So here we've got GABA, one of the other neurotransmitters that does seem to be closely tied to PTSD. And again, it comes back to what you said earlier that you've got to address some of the biochemistry and these physiological changes as well.

Alex Howard

So we've mentioned serotonin, GABA, cortisol, shall we go through each of these biochemical imbalances one by one and just explore a little bit more what's happening here?

Trudy Scott

Yeah. Let's do that. And then as we go through each of these we'll talk about the symptoms. And then I'll tell you how I approach it in terms of helping people assess what their lowest symptoms are. And then how you use these amino acids, because it's powerful because you get results very quickly and then it enables you to deal with all the other things that are going on. Because when you are starting to deal with whatever the situation is, whether it's trauma or whether it's Lyme disease, there may be trauma and Lyme disease, whatever it is, there's often a lot of overwhelm. There's a lot of fear. There's a lot of uncertainty, and you may not be sleeping well. So if we can do something that's going to get you results right away, that's my goal. And that's what the amino acids do.

So let's talk about low serotonin. And with low serotonin, I'll list off a number of symptoms, but before I do that I just want to mention, I'll have my clients look at the symptoms questionnaire and rate their symptoms on a scale of 1 to 10, with 10 being more severe. So right off the bat they're identifying what's going on with them. And it can be slightly different for each person. But typically with low serotonin you'll see anxiety, and it's the anxiety in the head, the ruminating thoughts, the worry, fear, panic attacks, phobias are very common with low serotonin, and then insomnia.

Now we have insomnia with low serotonin and also with low GABA. With the low serotonin kind of insomnia, it's a lying awake imagining the worst, ruminating, reprocessing things, reprocessing the traumatic event. You may imagine the worst. You may have these recurrent, unwanted memories about the event. You may have the fear that this trauma is going to happen again, whatever you went through.

And then the other symptoms that we see with low serotonin is that depressed type symptoms, the low mood feeling, negative, glass half full, hopeless, suicidal thoughts or behaviors. And then there

are these hormonal symptoms that we see with low serotonin as well. And that's PMS (premenstrual syndrome), perimenopausal syndrome and even menopausal symptoms. And then irritability and, believe it or not, anger and lashing out is also often associated with low serotonin.

[00:12:45]

And then, as with all of the neurotransmitters, there is also a cravings aspect. So a desire for something sweet in order to self medicate to feel better. And with the low serotonin it's typically afternoon and evening because that's when serotonin starts to take a dip. So you identify that, yes you've got these afternoon and evening cravings. And a lot of my clients will say, I just need to save space for dessert. I need to save space for dessert because they're wanting something after dinner. And that's a typical low serotonin craving.

And then the other thing that I didn't mention when it comes to mood type symptoms is the low self esteem, lack of confidence and this feeling of imposter syndrome. I work mostly with women, and so many of them say, 'I feel like I'm an imposter. Someone's going to find out I'm not as good as I am'. And this is classic lowest serotonin. And there are two amino acids that I use, but I'm going to pause here to see if you've got any questions. And then I'll talk about how we use these amino acids to start shifting things.

Alex Howard

Yeah. Well, I also think what I'm hoping is as you're talking Trudy, that there will be people, I'm not hoping they've been suffering, but people that will have been struggling with some of these symptoms that have tried different things and think that they're crazy or think that this is just the way that they're wired. And the point that you're making is that there are measurable imbalances that really can explain some of these experiences.

Trudy Scott

Yes. And I'm glad you mentioned that. Some people think that that's the way they're wired. I've worked with so many people who say, 'you can't change the way I feel. I've just always been like this. My mom was like this. I was like this. My grandmother was like this and it just runs in our family'. And then they start to make some of these nutritional changes, and they can't believe that they feel different. They feel more optimistic and happier.

I had one client, and her big issue was she was very controlling and controlling is also a symptom of low serotonin. She said, 'no, it's just the way I am. That's how I get things done'. And once she addressed the low serotonin symptoms the controlling issues went away, and she had a much easier time working with her team because she was less controlling, she had less perfectionism, she was less irritable, and she lashed out a lot less. So sometimes we think it's our personality, but it can actually be a nutritional deficiency.

Are we ready to talk about the amino acids that we use?

Alex Howard

I want to respond to that as well. It's a great example. People talk about vicious cycles where we get in a negative spiral, but there's also what I call virtuous cycles, where you shift one piece, like if you're used to being controlling of everyone around you, and then that calms down and then suddenly your relationships become easier. So then that calmer place in you gets mirrored by the environment and

then you find you sleep a bit more easily, you feel a bit more optimistic and sometimes one relatively simple change then has that ripple effect in other areas in one's life.

[00:16:31]

We touched on low serotonin, shall we also talk a bit about low GABA and high cortisol as well?

Trudy Scott

Yes, but I wanted to just share about the amino acids that we use for the low serotonin. As I said, I have my clients look at these questions, these symptoms, rate their symptoms on a scale of 1 to 10, and then we'll do a trial of the amino acid. In this case, it's either tryptophan or 5-HTP. The starting for tryptophan is typically 500mg, for 5-HTP it's 50mg. I always start with tryptophan. Other practitioners like to start with 5-HTP. Some people do better on one versus the other, so it's a matter of doing a trial and seeing how you do.

You may say my cravings are 9 out of 10, and I've got zero confidence and I just can't switch my busy mind off. Those are all 9s out of 10. If you find the right dose and if it is low serotonin, you can expect to feel some relief within 5 minutes if you open up the capsule onto your tongue. This is how quickly you can expect results.

Now, that might not be the ideal dose that you need. It may just take your symptoms down one or two notches, but what you will do over the course of the next week is increase and see if you get any better when you go a little bit higher and then maybe bring it down four notches, then you increase it again and you bring down another four notches and you're starting to see these results really quickly.

And that gives you this hope, it takes away some of this overwhelm and it just makes it easier to make all the dietary changes that are also part of this because you've got to start eating breakfast, you've got to get off the sugar, you've got to get off the caffeine, you may need to get off gluten. And because of the cravings aspect, if you are self medicating with some of those sugary foods for example, or carbohydrates, addressing the low serotonin is going to help that as well.

Alex Howard

And you're also making a really important point around dosing by listening to your body's response. So as opposed to going in and saying, 'someone told me, I must take this dose', of really working to find that minimum effective dose where you really get that difference in how you feel.

Trudy Scott

Yes. And it can be different for each person.

And I've got a story to share, a case study of a young girl that I worked with. She was adopted and she was diagnosed with RED (reactive attachment disorder), and she had the anxiety, she had the insomnia, intense cravings for sugar, she actually loved bread, she loved colored candies. And her big issue was this explosive rage and anger issues, so explosive that her mum would have to hold her down.

But going to your point of finding your ideal dose, for her 100mg of tryptophan completely switched things around. And she was in the office with me and her mum and we were talking about the sugar and the bread and her symptoms and when we started talking about having to give up the sugar, she

was just not happy. And she was in a swivel chair and she spun the chair around and she put her back to me and she didn't want to talk. And I continued talking with her mom. And then we figured out what her severe symptoms were and how severe they were.

[00:19:45]

So I said to her, 'how would you feel about just trying this chewable tryptophan?'. So the company that I use actually has a chewable tryptophan which is great for trialing with kids. It's 100mg, so typically, as I said, I start with 500mg, but for a child she was 11, 100mg is a great dose to trial, and it's a great starting dose. And she chewed this, she had no idea what she was chewing. She didn't know what it was going to do, but within 5 minutes she turned her chair around and she looked at me and she was smiling and she said, 'I'm ready to try and give up candy'. And this is an 11 year old who had no idea what we were doing.

Now this was life changing for them. The rage issues went away, she was sleeping better and she was able to give up the candy and the bread. Now, they were a family that didn't have a lot of money so I had to just try and figure out what could we do that was going to give us the best results. So it wasn't just a tryptophan, the other thing is she was very low in iron, so we added in grass fed red meat into the diet. And gluten was a big issue for her, she had to get off the gluten. But what the gluten was doing, that was contributing to the low iron, and the gluten was contributing to the low serotonin. There's research supporting that.

So once we address the gluten issues and she healed her gut, the low iron wasn't a factor. We know iron as a cofactor for making serotonin. But in the meantime we gave her the tryptophan to give her that tool to get over that hump to start feeling better right away and the outcome was amazing.

Alex Howard

I love those kids vitamins that look and taste like sweets. It was revolutionary with my three kids. They want to take their vitamins in the morning because they're going to get a sweet. It's really great that there's that kind of way.

And it just goes to show that again, this point around these virtuous circles that if you can move one piece in the right direction, there's the ripple, but also, it sounds like, particularly with this girl, there was a sense of buy in that suddenly happened. There was a sense of, wow, you did something that changed something. Let's do more.

Trudy Scott

Yeah. She could feel it right away. Which was amazing. It was when I was first starting out using the amino acids and I remember a lot of my clients would say to me, 'could they really be working this quickly? Is this a placebo effect or am I feeling better after having done the trial? Am I feeling better because I'm sitting here with you and I know someone cares?'. And I would say, 'I don't really care what the effect is, the fact that you're feeling something is good'. But to see this young girl get such a profound effect was amazing for me. And it's a story that I love to share because she got such amazing results.

But, Alex, I wanted to go to your point about something that tastes good because this is a chewable tryptophan that does actually have a little bit of sugar in it. So it's nice to do a trial, but long-term use it's not ideal to do something like this because then she was going to be getting too much sugar. So you've got to be careful, you've got to weigh it up. But using something like us to do a trial is perfect.

[00:23:01] Alex Howard

Great. Should we come to low GABA? We've touched on that a little bit. And say a bit about how that also, some of the symptoms can be different to, for example, how you outlined low serotonin.

Trudy Scott

Yeah. So I like to make sure people understand that anxiety can be caused by very different underlying causes. And once you identify what type of anxiety you have then you know what to do about it. Because some people will say to me, 'I tried tryptophan, it did nothing. My friend has anxiety, she tried it and it was amazing'. But maybe your anxiety is not because of low serotonin.

Now, that's not a really great example because a lot of people who have low serotonin also happen to have low GABA, but let's go into the low GABA kind of anxiety. So it differs from low serotonin, which remember is the worry, the ruminating, head kind of anxiety. With low GABA it's physical, so you'll feel it in your physical body. People will be sitting there with their shoulders hunched, they have this sort of tension going up into their head, you can have stiff muscles. The insomnia that we see with low GABA is lying in bed feeling stiff and tense versus lying in bed with low serotonin where you feel you can't switch your busy mind off.

The symptoms that are more specific for when it comes to trauma are physical reactions like you may tremor, you may shake when you think about the traumatic event. And there's actually one study that shows that GABA can help with intrusive thoughts. Now, typically that's low serotonin, and you might say, 'well, how do I know if it's low serotonin or low GABA?'. Well you do a trial of the amino acid and you see what happens. For some people the tryptophan can switch those thoughts off, for others the GABA can help with some of those intrusive thoughts.

And the other big thing that we see with low GABA is this self medication with alcohol. It could be stress eating, so it could be carbs, similar to the low serotonin, but it's typically alcohol because alcohol relaxes us, it makes us more social, we feel like we can fit in, at the end of the day you might feel like you need a glass of wine just to chill out and just get in the mood or whatever. So that is a common thing that we see with low GABA.

And the amino acid that we use to address these low GABA levels is GABA. It's used as a supplement, just like the tryptophan or the 5-HTP. We can also use thiamine, thiamine works on GABA, it works on serotonin and also works on dopamine to some extent. I consider GABA the Rolls Royce. I consider thiamine like a VW. Some people do great on it, but for some people they need GABA.

Now, the important thing about GABA is it does need to be used sublingually. A lot of people don't believe GABA works, so you'll hear people say it doesn't cross the blood-brain barrier, it can't possibly have an effect, or it's only going to have an effect if you've got a leaky blood-brain barrier. But it does need to be used sublingually, and the fact that we've got these GABA receptors throughout the body, maybe it's not getting into the brain, maybe it's just relaxing our body and then that's having an effect on the brain.

There's also a lot of research now showing that it may be communicated to the brain via the vagus nerve, we've got the gut-brain axis and the microbiome, so we don't quite understand how it's working on many levels, but we do know that it works and it does need to be used sublingually in order to work.

[00:26:39]

And I do want to just mention the dose because this is really important. Fortunately, a lot of over the counter GABA products are 500mg and 750mg, and a lot of people hear about GABA, they rush out and buy it and that's way too high. I start with 125mg, so it's way lower than what you're seeing often in some of the store bought products. And it's important to start low, rate your symptoms, start low with 125mg, use it sublingually and then go up based on your response.

And again, when someone uses GABA they may have this physical tension and they've got to have a glass of wine and they'll take that GABA and they'll say, 'I just feel like I had a glass of wine'. That's the feeling we're looking for. You're getting it with the GABA because you're addressing the low GABA levels.

Alex Howard

And just to explain what you mean by sublingually. So you mean taking it under the tongue, for people that may not know that.

Trudy Scott

Yeah, there are some GABA products that are chewables, or they're sublingually, there's some sprays as well, so you just spray it on the tongue. If it's a capsule, just open up the capsule and sprinkle the powder on your tongue and hold it there for a minute or two. Don't swish it with water or anything. Hold it there and it gets absorbed through the blood vessels in your mouth and then you're getting those results right away.

And again, with the GABA, you can feel results within 5 minutes, you'll feel that physical tension starts to dissipate. And with all the amino acids, I forgot to mention with the serotonin, with all the amino acids, you do them away from protein. So you do it in between meals so it's not competing for absorption with the protein, the other amino acids and the protein that you are consuming.

Alex Howard

And do you want to say a little bit also around things like yoga, Tai Chi and meditation and how they can affect GABA?

Trudy Scott

Yeah. There's research showing that all of them raise your GABA level. So that's definitely something that you want to incorporate into your daily activity, getting out in nature forest, bathing or seeing something like a rainbow, all of that helps to support your GABA level. So we want to be doing all of that as well.

And then Alex, right at the beginning you mentioned the benzodiazepines and how you said you had a client, or you know someone who's been affected by the benzos.

Alex Howard

A few clients over the years.

[00:29:03] Trudy Scott

They are Ativan, Xanax, Valium, they are unfortunately way too commonly prescribed. People are on them long-term and tolerance can build up, and then when you want to taper, you can have very severe withdrawal symptoms. That's called discontinuation syndrome. So if we can use something like GABA when someone is anxious, we're not going to have those kinds of issues.

Alex Howard

So Trudy, I know you've got a study looking at PTSD and estrogen, so let's come into that.

Trudy Scott

Yeah, I really wanted to share this because this just came in two days ago, and I thought, oh, I've got to mention this when I do my interview with Alex. And earlier on in the interview I mentioned how women have this increased vulnerability to PTSD. And in this paper they're actually looking at the underlying biology. This was published just a month ago. The name of the paper, *Estradiol, Stress Reactivity and Daily Effective Experiences in Trauma Exposed Women*. And in this paper they mentioned high cortisol, which we talked about earlier, and we're going to get into a little bit more detail in a second, and they talk about more severe symptoms in the first few days of their cycle when estradiol, which is one of the estrogens, is low.

In this paper they don't mention progesterone, but I do want to just mention that progesterone is also often low at this time and is related to PMS type symptoms. But the authors state that for women who are cycling it may be useful to understand how the menstrual cycle affects their PTSD symptoms. When you can explain what's happening biologically, it often becomes less threatening.

So I think the word biologically is key. And then also you talked about feeling in tune with what's going on in your body. I have all my clients keep a log of their symptoms in relation to their cycles because they can suddenly see things get really bad just before their period or during their period. And then keep in mind, in terms of what we've just spoken about, GABA and progesterone are very closely related. And tryptophan and estrogen are very closely related. So if we can support someone's hormones by addressing their GABA levels and their serotonin levels, using GABA and tryptophan, that's going to start to make a difference.

There is another study I just wanted to mention, but this is one that I talk about all the time. This was published about 15 years ago. It's one of the few double blind placebo controlled trials using tryptophan, but this was on women. They were not women who had experienced trauma, but it was a study looking at premenstrual dysphoria, anxiety and irritability. And they had them use tryptophan in the second half of their cycle, and they found that it eased all of these symptoms within two or three cycles.

Now this is something that I see all the time. I don't typically use it, just in the second half of the cycle, but it can be done, and this is what the study found. But using the GABA and the tryptophan, like I've talked about here, we will start to see a shift in hormones and a shift in these perimenopausal and PMS type symptoms. So I would love to see a follow up study from these authors using tryptophan and I'm planning to reach out to them and share this tryptophan study because it's so powerful that we can start to give some of these women, who have been exposed to trauma, some relief using these amino acids.

[00:32:33] Alex Howard

I think that sounds fantastic. Shall we come into high cortisol and again, touch on some of the differences with low serotonin and low GABA and how one might identify that it's actually high cortisol, which is their primary presenting piece?

Trudy Scott

Yes. So with high cortisol the way most of my clients describe it is like an adrenaline surge. They'll just feel like revved up, they'll often wake with a jolt of fear, and it's often in the night they may wake or they may wake in the early hours with this jolt of fear and this feeling like impending doom. And there's no reason for it, often there is if there's trauma but if someone hasn't been exposed to trauma, they may just say, I don't know what the feeling of impending doom is. So it can be an issue for people who may not have been exposed to some kind of traumatic situation.

Obviously you can test cortisol levels with a saliva test, and there are factors other than the trauma that can raise your cortisol levels. Earlier on I mentioned gluten, parasites can do it, and lack of B vitamins. And then what we want to do is support the adrenal, so using adaptogenic herbs are great, like Rhodiola, ashwagandha, and B vitamins.

And then I've got two nutrients that I really like to help lower the high cortisol. Seriphos is one of them, it's a phosphorylated serine. We often hear about phosphatidylserine being helpful to lower high cortisol, but this phosphorylated serine I find to be very effective to start to help to lower that high cortisol and to give folks this immediate relief from that jolt of fear. It's not as immediate as the GABA or the tryptophan. The GABA and the tryptophan typically take 5 minutes and over the course of the next few hours you're really noticing it. With seriphos it's more like a week type of situation where they start to notice it, and they're not waking with that jolt of fear.

The other nutrient that I really like is lactium, which is a hydrolyzed casein product, and that can also be used to help lower that high cortisol while you're addressing some of the underlying reasons why someone may have high cortisol, therapy because of the trauma or parasites or gluten or whatever it is that is pushing that cortisol level higher.

Alex Howard

Fantastic. Now I know you've got a case study that helps illustrate how what's happening in the body can sometimes present as, for example, PTSD. You've got an example with pinworm. So walk us through that.

Trudy Scott

This is very interesting. This is a published case study that illustrates that underlying biochemistry can look like PTSD and you've really got to go and address the issue. And we mentioned earlier how something like parasites can actually raise your cortisol, parasites can lower your GABA levels, they can lower your serotonin level. So we've got to address the underlying parasitic infection.

But in this particular paper, it was a refugee camp, and it was a young girl, and she presented as post traumatic stress disorder. And they felt, because she was in a refugee camp, that it was the trauma of being in the refugee camp. And she had nausea, diarrhea, insomnia, irritability, loss of appetite, and nightmares. And she was in therapy, and they were trying to support her because of what was going on. And they figured out that it wasn't actually the trauma of being in this refugee camp, it was

pinworm. And once they addressed the pinworm the symptoms that she was experiencing went away. So we've always got to be looking deeper and addressing whatever the underlying biochemistry is.

[00:36:41] Alex Howard

I think it's just such a great example, one of the key points that we're making is that you can have psycho-emotional symptoms but that doesn't always mean the cause is at the psycho-emotional level. And I know you've also got a study looking at nutrition as an intervention, working with some of the earthquake survivors in New Zealand. So let's come into that because I think it illustrates this point even further.

Trudy Scott

Yes, it's fascinating. This is Dr Bonnie Kaplan and Dr Julia Rucklidge. Bonnie Kaplan is actually a Canadian researcher, and Julia Rucklidge is a psychologist in New Zealand. And they've collaborated on a number of studies looking at nutrients that help people who have been exposed to some kind of trauma.

And in this particular paper, they looked at earthquake survivors in New Zealand. And it was a small study, 56 adults, 23 to 66, and they were randomized to receive either just vitamin D or a B complex or a broad spectrum multimineral vitamin formula. And they were monitored for changes in depression, anxiety and stress.

And they all saw improvements in all the measures, but they found that those consuming the B complex and the broad spectrum multivitamin formula showed significantly greater improvement in stress and anxiety compared to those just consuming the vitamin D.

Now, as you know, Alex, not everyone needs vitamin D. So I don't know in this study if they actually looked at vitamin D levels, because if you don't need vitamin D, you probably aren't going to see an improvement.

Alex Howard

Although if you live in the UK you need vitamin D. It's almost recommended. You almost want to put it in the water supply. I mean, not quite, but it's such a prevalent issue, certainly this time of year.

Trudy Scott

And I would expect it to be an issue in New Zealand, too, because of the weather there. So I was expecting it probably was lower, but they didn't actually measure it in this paper.

But the important thing also that I wanted to mention is that vitamin D and serotonin go hand in hand. You've got to have good vitamin D levels in order to be able to utilize the serotonin that is being made in the body.

But the end of the story with this one is that just something as simple as a B complex can make a difference. And we know that the B vitamins are needed to make our neurotransmitters in conjunction with iron, I mentioned that earlier, in conjunction with zinc, we didn't mention zinc but that's really important, in conjunction with magnesium. So just making these little changes can make us more

resilient, as you said earlier, when we are going to be exposed to something like an earthquake, heaven forbid, or we have been and now we want to start recovering.

[00:39:26] Alex Howard

So Trudy, there's a lot of pieces that we've covered here, and one of the things I really appreciate about your way of working is it actually feels pretty accessible and simple, but I'd love us to just bring it back to a few core takeaways that people can start to work with.

Trudy Scott

So the big takeaway, and you've alluded to this throughout, which I think is great, is that we've got to look at the biochemistry too. We've got to look at what's going on. And the other big thing is that it can be different for each person. Someone may have, it may really affect the adrenals more so than the serotonin or the GABA, if they've got good gut health it may not affect them as much.

But the big thing is giving people relief very quickly right away. And the neurotransmitter support is the first place I start because people get results quickly and then it makes everything else feel a lot easier. So if we can address low serotonin and low GABA, have people do the questionnaire, do a trial, see how you feel, and as you said earlier, you're getting that feedback right away so it makes it easier for you to continue and it just makes everything feel less overwhelming.

And then you start doing cortisol testing, you do parasite testing if needed, you look at infections, at the same time you're doing the trauma work, you're making sure you're getting out in nature. So yeah, it's important that we definitely look at biochemistry as well as everything else.

Alex Howard

Fantastic. Trudy, there's so many questions and places we could go, but I'm mindful of time. But for people that want to find out more about you and your work, what's the best way to do that and what's some of what they can find?

Trudy Scott

They can read my book, *Anti-Anxiety Food Solution*.

Alex Howard

You very kindly sent me a copy of which I'm looking forward to getting into.

Trudy Scott

Good. So I've written it so people can pick it up and run with it and do everything. It starts with the food changes, which we didn't really talk about today. I mentioned a little bit about gluten, and sugar is a big issue. Blood sugar balancing is really important, eating real whole foods and then addressing the gut. And then there are chapters on the amino acids. A lot of people pick up the book and they just run with it, with the instructions that I have in the book. I want to empower people so they can take care of themselves.

For some people that's too much. There's too much fear around trying things on their own. So I've got online group programs. I host the Anxiety Summits where I do interviews like this. I've interviewed you

on one of my prior summits where we interview various different experts. So you can learn about all the possible root causes because we've just touched on a few. I'm not saying these are the only things we need to look at, but these are things that I like to start with with my clients.

[00:42:21]

And then the final area is for practitioners. I have the [Anxiety Nutrition Institute](#) where I teach practitioners how to incorporate using the amino acids into their practice so they can start getting these results quickly because it's life changing for my clients. And when you're using these kinds of protocols in your practice it just makes things so much easier. And then you've got clients and patients that really love you.

Alex Howard

Fantastic. Trudy, thank you so much. I really appreciate your time and I really encourage people to check out your book, check out your courses and your work. And it's been a real pleasure. Thank you.

Trudy Scott

Thank you very much, Alex.