The Four Quadrants Of Structural Causes For Mental Health Dysfunction And What To Do About Them Transcript

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Introduction to Functional Medicine

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We have to be looking at the root cause that relates to the structural changes that we can modify the microbiome, the immune, and the nervous system to produce an outcome that's called the right function.

So we don't treat to effect, we treat a cause. This is Dr. Talks. Hello everyone and welcome to the Microbes and Mental Health Summit. I have the pleasure and great honor of being here today with Dr.

Jeffrey Bland. Dr. Bland is sometimes called the grandfather of functional medicine and has done seminal work for more than four decades in this field.

And has been a teacher has, done research has founded the personalized lifestyle medicine Institute and done so much that we won't go over all of it other than to say bestselling author.

peer-reviewed research publications, over a hundred of them, lots and lots of important work in this field. And Dr. Bland has a really interesting perspective on the big picture of how mental health can be affected by the interplay of many different body systems, many, different infections and gut microbiome dysregulation and immune function dysregation.

So we're going to dive into Great details. Welcome, Dr. Bland. Thank you for being here. Oh, what a great treat and privilege to have this opportunity to share with you and maybe open up a few new thoughts that people might be able to deliver to their lives and others that could make a positive outcome in their health.

So thank you. It's a real privilege. I'd love to hear a little bit of your backstory. Why did you become so engaged and interested in the field of functional medicine?

Yes, I think there's a lot to that story in my 77 years of living, so I promise you I'll keep it very concise. But I was a medical school professor starting in 1970, and I had an opportunity, it's actually a life-changing opportunity for two years in 81 and 82, in 83 actually, of doing a sabbatical with the two-time Nobel Prize-winning laureate Dr.

Linus Pauling at his institute in Stanford.

Linus Pauling and the Structure-Function Idea

And I won't go through all of the things about Dr Pauli and his wife Eva Helen that were remarkable, more than just their science, their whole humanism and their full understanding of how People fit together to create systems that work, not just as molecules that make up cells, that makeup tissues, and make-up organs and makeup whole bodies, but our whole body work together, to form enterprises that we call society that are successful.

And there, what I learned, if I was to summarize my two years of experience there. was that this principle of structure and function is a really powerful metaphor for so much that we see around the world and for things that affect our lives directly.

And so the construct is, if I could summarize it in a sound bite, is that if you can get the structure of things right, their function will follow with high level.

And as I applied that concept to every level of thinking from the sub-particle nuclear physics level to the atoms level, to molecule level right on up to cosmology, I felt that that concept of gift the structure right and the function will follow was a very carful conceptual framework upon which to build a view of how life could be improved.

And so with Coming back from that two years of experience, I made what I think is now looking back, kind of a crazy decision. And the reason it was crazy is that I had a tenured faculty position.

I've had very large research group, had young family, a mortgage, all the things that real people have living in a life of growing up. and I make the decision to give up at all as I was driving with the family home 1100 miles from from Colorado up in California to the Seattle, Washington area where we live.

to give all that up and to start an enterprise to teach doctors how to do functional health in their practices. And I didn't have, that was my whole business plan, quite honestly.

I had no sense as to how I might actually make that work, but I threw myself into that. The advantage admittedly that I have been doing quite a bit of lecturing and traveling before that, and so I've had many contacts around the world that could kind of use to develop my voice.

But it was a pretty bold idea, giving up everything and just throwing it all in. That's called burning the boats. You know, I guess this is what they'd say.

And it worked out actually very, very well. It wasn't a linear path. There were some rocky roads along the road, but I'd have to say that the pivotal point, I believe was 1990. And I give credit to my wife, Susan, for this, that she had seen how much travel I've been doing and meeting interesting people around the world and speaking highly about their innovation and things.

She said, you know, maybe we ought to host a meeting in which it would be a whiteboard meeting and you could bring some of your your favorite thought leaders in and we can just sit and speculate on what would an ideal health care system look like if we didn't have licensure and reimbursement and all the other kind of artifices that lay on top of the business of health.

If we just kind structured it kind with the ultimate goal to produce the most viable system that could support health, not just disease treatment. So we did that.

We sponsored a meeting, brought about 40 people into Victoria, Vancouver Island, British Columbia. It was a marvelous few days together. Was so successful, we decided to do it the next year.

So that was 89 in 1990. And out of that then was born the concept. I actually had it kind of in a dream, believe it or not. I came back to the group on the last day of the second year and I said, hey, I think we had a call, we're doing functional medicine.

And everyone said well, that's kind of an interesting term. It seems like it's already being used as either psychosomatic medicine or geriatric medicine, maybe it is not the most glamorous term, but I say, boy, think it actually changing with the way that people are now studying function at every level.

Function at the cell or the tissue organ and organ system level, and think that we can skate to where the puck is going. and inaugurate the Institute for functional medicine in 1991, had our first international conference in 1992, and now over 150,000 practitioners have gone through its corsets.

So that's kind of probably more than you wanted to know summary of how I got to where I am today. Well, there are several things I love about that summary.

One is that you had the courage to follow your heart when it didn't make sense logically. And that is something that I find that I respect greatly the person who has the passion in their heart when the mind says all the reasons why not to.

Logically, it doesn't make sense. Externally, you look at, wait, your set up for this, why would you do that? But to feel in your heart and have the courage to take the steps, make the leap, burn the boat, as you said, to be able to follow your hear and passion and go in the direction and that's led to immense, as you mentioned, over a hundred thousand practitioners being trained and many more.

It's a, I mean, it's something that that's going to live on and train many hundreds of thousands of practitioners over time and develop a field which is maturing and becoming incredible at this point.

Depression, Homeostasis, and the Gut-Brain Axis

And the other part I'd like to highlight is this structure and function piece, which, is that there is the sense of that when you get the structure right, the function follows where when there's, it's almost this sense of the default mode when, you know, when the structure is aligned in the way that it is meant to be aligned, that the function, the healing process, energy, vitality, cognitive function the ability to have mood be regulated is the default, natural, underlying thing.

It's not that we have to get there, it's that we just have to uncover it through aligning the structure. And I really like that too, because it, says it brings it back to some age old concepts that I think cross-culturally in many traditions, many of the wisdom medical systems have shared this similar kind of concept.

Absolutely. I, really want to compliment you. Or I you picked up on it beautifully exactly why It caught me and has kept me in training all these many decades.

And, you know, ironically, after we started the Institute for Functional Medicine, about three years later, one of our senior faculty came up and he said, so, Jeff, do you realize that there was an article published in 1873 in the Lancet Medical Magazine on functional medicine?

And I said oh my word, I consider myself a bibliophile, it's a shame on me, but I had not seen that article. It was authored by Dr. Willoughby Wade, who is a senior dean of Birmingham Medical School back in the 19th century.

And it was lectures on functional medicine. Although the language was very 19 century, the concept was, very, consistent with what we thought we were inventing.

Obviously we have the advantage of science having evolved quite a bit since 1870s, but the basic structure of the thinking was really, I have to give Umbridge to Willoughby Wade because I think he really spelled it out quite beautifully in that article.

And what we ultimately did, and this really relates to the point you're making about mental health, is we recognize that when you start looking at individual kind of conditions, state functions of health in the individual, so that in me Western medical system often parses down into knowing more and more about less and less, especially medicine.

So you started, you know, getting into this very specialized view of every organ part of the body. that really these things are all interconnected through some kind of a system that arranges their structure that allows their function to find its own resting spot or equilibrium.

And I'm reminded of the term homeostasis, because homeastasis is often the Walter Cannon concept considered to be when you're in optimal health. But actually, you can have homeo stasis around dysfunction.

You can have homeostasis around autoimmune disease. You could have homoeostesis around diabetes. So you can homeoostosis around inflammatory bowel disease, or I could go down the list, lexicon.

What we really want to be in a state that's centric around resilience, which is where the body finds its own balance point. If we think of conditions like depression, anxiety, mood swings, sleep disturbances, these are not diseases.

They're functional states that arise out of inappropriate structure of how things in the body are talking to one

another. Now that begs the question, well, what then influences the structure?

Part of that is determined obviously by the genes that we inherited from our biological mother and father, but that's really a less than 50% contributor to the function as we grow up.

In fact, most people would say it's probably like 30%. 70% comes from things that we are exposed to, things we, starting actually at the moment of conception, maybe even preconceptually, that can travel with us to mark our genes, the so-called epigenetic events that then regulate how our jeans will actually be expressed into how we look at and feel.

And that, then, is what determines our structure, which ultimately determines out function. So with mental health, we start saying, well, What are those things that influence this structure that then translate into our function called good days or bad days?

And to me, it breaks down into four modifiable quadrants of structural elements. And those are structural element around your physical structure, your body and its architecture, ligaments, bones, muscles, all that kind of stuff, connective tissue.

Second is your metabolic structure. which has to do with things about how your hormones and neurotransmitters and all these kind of geekism that I love to get into how they interact with one another.

The third is your cognitive structure, how you are processing events cognitively. And then lastly is you're behavioral structure. Now, each of those is a modifiable component if you understand them.

Therefore, if let's say you had a problem in your metabolism, Then you would say, well, I need to be working on that to personalize my approach towards improving my overall structure because that will then contribute to my function.

Okay, so let's look at mental health. What are some of the contributors? to metabolism that we now know directly relate to signaling to the brain and the peripheral nervous system into our function.

Well, there are things like the microbiome. We've learned now that the gut is connected to brain. So there is a functional connection through the structure of the microbion and structure the nervous and immune system, which all cross talk with one another.

Now the beauty of this model is that we can modify the structure of each of those to alter the function. It's not just because we got the lousy genes, so we didn't even fill out an application card and there's nothing we could do about it.

No, there are many things that can do. So the last decade has been truly revolutionary in this specific area to recognize that rather than just treat an individual with a drug that kind of does watch or carry the jackhammer on a nervous system, these would be A lot of these medications are used to treat the symptoms of neurocognitive issues.

Then we have the looking at the root cause that relates to the structural changes that we can multiply the microbiome, the immune and the nervous system to produce an outcome that's called the right function.

So we don't treat. The effect we treat to cause. That's the basic functional medicine model. And it can be surprising to people, wait, if I treat my got my brain changes, my mood changes.

And it's becoming less surprising, I think, in the last few years, but 10, 20 years ago, this was quite surprising and novel for people. It was a leap for a neurologist to study the gut microbes.

Now neurologists are very much studying the good microbes because there's this direct connection from the vagal nerve signaling from a gut to the brain that even more signals go that way than from to the gut and that's been

proven over and over with different research.

It's concept of the homeostasis, the homostatic mechanisms by which people can perpetuate not just balanced health, but imbalance. And that's important too, is that there can be this sense that the body wants to maintain balance, on what point, where are we referencing that balance?

And if that balanced is referenced from chronic illness, which now the CDC says six in 10 Americans have at least one chronic disease, four in ten have two or more, then a majority of people's homeostat mechanisms are hinged around the central aspect of a chronically diseased state is what is perpetuated.

And when we can see a reflection, it's almost like a mental health concern, depression, anxiety, or PTSD, even cognitive decline and dysfunction, brain fog or memory issues that start to arise are arising as a response to, as you're mentioning, this underlying structure, which is so eloquently divided into four quadrants.

And these quadrants relating to well in if we zoom in on the metabolic quadrant, we could say that this got microbiota connection is very strong in research and that may be a good leverage point for this person.

And by changing that people might take some. change their diet, take some probiotics, prebiotics, other things that are modulating that gut microbiota and have a shift in their mood that can stabilize around a new homeostasis, a central balance that maybe is no longer depressed, no more anxious, maybe it's feeling more peaceful, more loving, and more caring.

So what of these quadrants in this structure is leading to the functional changes around things like depression and anxiety. There's a growing body of research, for example, on the cytokine theory for depression that's looking at an inflammatory cause of depression, but then we have to say, why is there inflammation and go a layer deeper?

Is that because of intestinal permeability leading to lipopolysaccharide creating that inflammation? Or is it because inflammatory food inputs or the behavioral quadrant?

Are we dealing with behaviors that are perpetuating this inflammatory state or is their an environmental exposure to a toxin? What would you say are some of the low-hanging fruit and then some of the ones that are maybe there and researched but not often assessed for an address.

By the way, I think you did a fantastic job of summarizing in very, very plain and understandable language everything that that I would like to say, I think that was beautifully said.

I, think I can add a little color to your summary, however, and that is let's go back. If we can, let us use depression as a model here for a second, because it is so common in our society right now.

It's something like 30% of the adult population has been found to have different degrees of depression at any one time. And I. Coming out of COVID, if we are coming out, but hopefully we have increased prevalence of post long haul depressive symptoms with COVID.

And so the central theory of depression, which I grew up on in my medical school training, and which would be in the sixties, was that depression comes to the consequence of the imbalance of neurotransmitters.

Because we have these chemicals that the brain produces in different regions of From those structures come those functional molecules that have names like serotonin and dopamine and noradrenaline.

And these particular bioactive molecules operate at the synaptic junctions to alter nervous system function. and that has been well explored within experimental neurology.

It's the standard of understanding of how brain chemistry kind of starts. And so people then got under the thesis that there must be imbalances in these neuroregulatory hormones or neurotransmitters that give rise to the depression.

And studies were done to look at the balance in different people to see if that hypothesis could be correct. Eventually, there was kind of the unified agreement that, gee whiz, maybe serotonin was a really important one that we ought to be focusing on.

Serotonins is actually derived in the body from a precursor, which is the amino acid tryptophan. And so we know that people that are on low trypophane diets have been found actually, this is particularly in Latin America with a lot of corn based diets, low in trypsophene, that they have increased depression and increased suicidal So they made these comparisons saying, oh, this is a serotonin problem.

So the development then was to work on the serocinergic system to treat depression. And they ultimately, and again, I'm getting into the microscopic kind of view as to how we go down this tunnel.

Eventually then it got to the ability to find new to nature molecules, meaning some big drugs. that were very effective in modulating this serotonin-related network that's in the brain, and they were called seroconin reuptake inhibitors or SSRIs.

And so SSRIs became a major class of therapeutic agents to treat depression. Now, if you look at this class of drugs, which represents several billion dollars of revenue to the very pharmaceutical industry every year, and you actually ask in the attempt to treat model saying, how many people would you have to tree to get a positive clinical outcome with these drugs?

It's something less than 30 to get 10 people to respond. So it's about a 30. You're only getting about 30% of response across the board. And what that means is that for most people, the drugs are not effective.

Well, you say, well, how does that happen? If in fact, they're approved by the government and you've got all these clinical trials on them. There's got to be data supporting their efficacy.

And the answer there is, because some people who take these drugs have very powerful positive effects that weighs out against the majority of the people that have no effects at all, and some of them even adverse effects.

So the statistics, when it gets to a level of significance, is what allows the drug to approved. That doesn't mean for each individual who has that condition that it's been proven it will work.

In fact, in the majority of people, it would not work, Now, why am I going through that? Because it turns out that only recently it's been discovered that this serotonergic hypothesis as to how these drugs work is probably not the whole truth.

Because these drug actually work as anti-inflammatory in specific regions of the brain. As you were talking about earlier, neuroinflammation in specifically regions in the may be the more important cause that downstream relates to these alterations in these neurotransmitters.

So these drugs, yes, they do modify serotonin, but maybe their principal activity is by regulation of neuroinflammation. You mean we've been on this bandwagon for some 30 years that the way you treat depression is with serotonin modulators, and now you're saying, no, there may be a whole different mechanism by which these conditions occur.

And the answer is yes, because the structural understanding of the disease with new research has changed. Now you say, but just a second, let's talk about the felt state.

Let's just talk to the average person. How does the other person feel? Let us assume that they would want to know from their own life experience, was there some relationship to what I just talked about?

So let's talk about a person who might have chronic irritable bowel syndrome or chronic constipation. Do these people have any increased prevalence of depression from people who do not have CIBS, do now have Chronic Irritable Bowel Syndrome?

Immune Rejuvenation and Nutritional Strategies

And the answer is yes. Many, many studies have shown there's a very strong relationship. It's called a comorbidity between depression and CIVS, particularly the constipation, a predominant form of C IVS.

Well, why don't that be? What's the mechanistic link between constepation and between the depression? And you would say, well, maybe because you have a bad experience when you're constapated that it just makes you anxious and you get depression.

That could be one possible explanation, but another is maybe there is a connection mechanistically at the functional level between what's going on in the gut with constipation and how that triggers and signal to the brain through the inflammatory processing system that leads to an alteration in mood-regulating hormones or neurotransmitters that causes depression.

Now, that's an alternative hypothesis, but it can be tested, and it has been tested. Only within the last less than a decade, we are now seeing the clinical science take this, what I call a hypothesis, and show that it's more than a hypotheses.

As you already indicated, the gut immune system and the got nervous system represents the second brain. And therefore we have all these messages going back and forth from what is going on in the extraordinary metabolic machinery of this complex array of microbes that live in our gut and far more cells in a microbe than there are in cells of the human body.

It represents one of the largest organs in the body, and that's the gut microbiome that weighs in an average person three to four pounds. And it has got its own business work.

Every one those organisms in there is creating its metabolism, its' own debris, it's own skeletons, which are then communicating to the immune system which is centered in a gut.

60% of our immune systems are in our gut, in direct and intimate contact with the brain through the brains immune system called the microglia. And they're all crosstalking.

So when you have what we call dysbiosis, meaning an alteration of the microbes in your gut that is producing a disturbance in that personality, what it does is it creates a disturbances of a personality in the immune system that signals it to be in an alarm state, which is called inflammation, within signals through the brain.

And now you'll have this neuro-inflammatory relationship to modulate neurochemicals that regulate mood. So the mechanism has now started to not be just hypothetical, it is now being recognized as actually factual.

So this is a whole new approach that has to do with re-nourishing the gut and in fact I'm very proud to say that in 1985 I gave the first seminar I can remember to help practitioners on this gut immune connection to the nervous system function.

And I think back to 1985, my word, gee, that's amazing. We introduced the term leaky gut back then, we introduced this term dysbiosis. we were ridiculed very, very heartily by the traditional gastroenterological community, but over time, that concept in which we ultimately developed a kind of a clinical approach called the 4R program, which is Remove, Replace, Renovate and Repair which was a way we could teach the docs how to actually intervene to improve the function of that relationship between the gut, the immune system and the brain.

There are literally millions, and I say that without probably hard data, but from experiential information, millions of people that have benefited from that program, that four hour program that we introduced back in the late 80s.

And it's all built around this concept. And now suddenly this is the new news. Suddenly the news is, the microbiome brain and maybe we've been treating compression wrong.

So it takes a few years maybe to get the paradigm to shift, but I think truth will out in the end, eventually if you have the patient. Yeah, it is. It is becoming more well-known, well understood.

People recognize the link and I two concepts that would be important to add into the discussion. One is correlation versus causation because we're going back to this history of depression and how there was this sense of, okay, we have this correlative data where we understand that these people who have lower tryptophan diets may have higher incidence and perhaps the trypophane conversion to serotonin may be why the higher incidents of depression and then we give these SSRI, these drugs that are re up, that're inhibiting the reuptake of serotonin, making it more available.

And then, we're getting a result. But is that result a byproduct of a side effect of the drug and not the intended effect, but this neuroinflammatory reduction and even some other studies showing maybe some microbiotal modulation even too from SSRIS.

Is it, you know, are we confusing the correlation between the results with what's actually causing and has that thrown the perception off for such a long time is one.

And then another is that I think this sense of priming the pump, because many people have this perspective that, well, isn't my depression because of this or that in my childhood, my counselor has talked about that this trauma may have been the beginning or this experience that which we do have studies on, for example, adverse childhood experiences and scoring the number of experiences that a person has had in their childhood that have been challenging or difficult experiences, that do correlate with and may have some causal relationship to with later experiencing autoimmunity and addiction and inflammation and depression and anxiety.

However, priming the pump is going, it's a sense that I want to draw out here to where that some people experience what would be considered to be traumatic events and don't have mood dysregulation.

Other people experienced more minor, what most people would considering more, minor events that are adverse and having more significant mood, dys regulation.

And what's the difference there? in the person who is more, as you mentioned earlier, resilient to this experience of intensity. The nervous system has the capacity to handle and to stay regulated, to maintain a threshold for tolerance, a window of presence through that intense situation without going chronically out of balance into this dysfunctional state.

And what's the difference between that and someone who has something happened to where their nervous system, its capacity has exceeded and it creates this complex that becomes a bigger mental health issue in the future.

And so to the person, I'm curious your thought, my sense is that there's this priming the pump with the underlying structure of the ability for the nervous, system tolerance and resiliency.

may be affected by these gut microbiotal changes and bacterial changes in the gut may actually make someone less stress resilient in face of adverse experiences or more stress-resilient in case of the same adverse experience.

So it's not that the adverse doesn't relate, but if the pump's been primed for not having resiliency, then it's more likely to manifest in this functional issue.

Would you agree with that and do you want to say more on that? I think that's really very well stated. I want go back to my first concept that there are four quadrants that kind of determine function that were the physical, the metabolic, cognitive, and the behavioral.

We, they all play together. None of them are unimportant. They all mixed together synergistically to create the outcome that's called our phenotype, how we look back and feel.

So we don't throw the baby out with the bathwater and say, Oh, it's all up in the gut microbiome and everything else is unimportant. What we say is there's this cross talk among all these four quadrants that ultimately determine our outcome and call it our body function.

So behavioral life experiences are extraordinarily important. They can epigenetically mark our genes in such a way that they'll lock us into post-traumatic stress with hypersensitivity to stimulate.

and keep us in an alarmist state. Fortunately, all these processes, biologically, are two-way streets. They're not one-ways streets, so our challenge is to find the street to return back to normalcy and balance and resiliency and not allow ourselves to be locked into this state of dysfunction, regardless of whether it's a behavioral dysfunction or physical or cognitive or metabolic dysfunction.

And I think that It's easy for me to say this, obviously the language sounds easy. It is clinically more challenging and I think this is one of the reasons that a lot of people tend to be kind of They'd be resistant to this concept that I'm describing because wouldn't it be easier if we could just take one pill or one potion or thing or counseling session of one Ayahuasca experience and it all be made good?

And in most cases, that's not the outcome. You need this kind of multifactorial approach that looks at where those imbalances are and those triggers are in that individual.

And we're all a person. We're unique facets on the diamond of life, each one of them. And therefore there's some general consideration, but then there is the uniqueness of our own individual experience of how our genes match with our life experiences.

So this is both the joy of being in the functional medicine community, But it's also the challenge because we have to start recognizing individual needs in ways that we can bring these four quadrants to bear on that person's own remedy.

And I think it's very different than saying, oh, it looks like a serotonin problem, so we'll just test a variety of different molecules until we get the right one.

No, we're looking at something that is… both more complex, but it's much more important in how the ultimate trajectory of that condition travels with that person throughout the course of their life, maybe even to a ultimately serious condition, or maybe, even as serious as suicide.

So how do we get to that point to treat the cause and not just the effect? And to make it that we're not going to simply change the drug approach to an herbal that's trying to do the same thing, modulate serotonin from an herb.

We're not switching to the Same paradigm with a more natural approach. we're Not looking at which foods are going to modulates seratonin, etc. were really actually looking At a paradigm shift of we are not actually Looking at the symptom expression and one layer possibly connected with that.

It's this sense of these quadrants that are interplaying together. So, there may be behavioral things that have impacted the epigenetic expression, even ancestral epigeneetic expressions playing together with gut dysfunction, playing a chronic infection such as maybe there's a post-COVID response that something in that infectious process created a lasting shift there on the physiology or the structure that's translating into an altered function.

And then there may be aspects of the mental-emotional space of where a person and how a personal is thinking and feeling where that modulation may helpful as well.

So what would be aside from gut work, doing some gut testing and treatment and like the 4R you mentioned that's been propagated and is more popular today and has been utilized in many cases.

What are some of the other biggest factors or variables you had mentioned post-COVID as one. Are there other things that you feel are important in relation to if we stick to depression or open it up and add in anxiety or other

elements that are really important for people who are struggling with these issues to take a look at and investigate in relationship to their mental health picture?

Yes, it's that question that actually led me in doing something again that probably was not rational, but I couldn't help myself. I made a decision about three years ago that this understanding of the role that the immune system plays in communicating between the gut microbiome and the nervous system seemed like it was a worthwhile area to really spend the remainder of my professional life digging into and seeing if I could learn more about that.

We formed this company that will help about three years ago. I'm very excited about this small group of extraordinarily dedicated collaborators, about 20 of us now, that are really focusing on how can we Get the immune system to talk favorably to our nervous system and talk favourably toward microvinyl.

And what are the implications of that would have if we could accomplish that? What type of felt state outcomes could be? Alertness, clarity, weight, energy, immune balance, less auto and pre-auto immune, all those kinds of things.

So it opened the door to me to recognize that there are only three things that are speaking in our body 24, 7, 365 of the outside world. And those are the nervous system, the gastrointestinal mucosal surfaces.

When we breathe in or when we consume liquids or foods, all of those surfaces are communicating with the outside world, like chemicals in the air when were breathing.

And the third is our immune system and then you say, well, where is the immune systems clustered? And it's clustering. Interestingly enough, in those surfaces that are exposed to the outside world, like the new coastal surfaces of our digestive system starting in our mouth all the way down to our southern hemisphere, and also in our lungs and airway.

This is one of the reasons why SARS-CoV-2 had such an impact on our respiratory health, because it turns out that the spike protein of SARS CoV 2 bound to these ACE2 receptors, which are part of immune system of mucosal tissues in nose and in airways.

And so you have this thing set up for infection. The question then that we raised is, are there ways that can understand how to take a person's immune system, which has been exposed to injuries over time and has a variety of what I'm going to call scars from experiences.

Those could be chemical insults, they could behavioral insult, nutritional deficiencies, related to gut microbial toxins, like you mentioned, lipopolysaccharides from brand-negative bacterial cell walls that are produced.

There's a whole array of different substances that could injure the immune system so it has the scars and these memories of bad experiences. And they stay with us over time, and they can even accumulate.

So our immune system becomes more injured. It remembers those injuries. And it becomes what is called senescent. it doesn't necessarily age the same as our age of birthdays, it could age faster than our aging birthdays.

We now know from SARS-CoV-2 infections in COVID-19 patients said often their immune system has aged dramatically over what it was prior to infection. So the question is, can we do anything about that once you've got there?

And it turns out immunological research over the past 10 years has identified that there are biological processes built into our body to rejuvenate the immune systems.

The problem is if we're damaging the system and giving it bad experiences, possibly we can re-juvinate it or decline. But if we can lower the rate of injury to our immune system while then activating what we call the immunorejuvenation system, then we actually recreate naive, healthy immune cells.

And by the way, our immunity system is producing literally tens of thousands of new immune cell every second. In fact, every three months, we virtually turn over every immune in our body to new cells, So the question is, when we turn them over, are they the same as the ones that they replaced?

Are they worse or are there better? And we have the option to make them better. So that became our focus in Big Bull Health. Could we find ways of actually enhancing the rejuvenation of the immune system to speak to the nervous system and the microbiome in a friendly term?

And that led us into the recognition ultimately, if this might say us, really, I should give credit to there's a large body of other people that are working on this.

It's not just us. But the group of scientists in the world that were working this problem have kind of all collaboratively found out that there are three things that we can do to help to rejuvenate the immune system and they're related to specific families of polyphenols and flavonoids found in certain foods.

have a unique immune rejuvenating capability. Number two are specific types of pre-botics and and probiotic organisms, I guess you call them syn-botics, that work together that actually create an immune-rejuvinating outcome to our immune system.

And then thirdly are omega-3 fatty acids, specifically fatty acid that are rich in vitamins D and rich these pro-resolving mediators, what are abbreviated as PRNs, they have these immune rejuvenating effects.

Those three, I'll call them pillars, become foundations for nutritional intervention for re-juvinating the immune system such that it will speak to the gut microbiome in friendly terms.

The gut micro-biome speaks to nervous system and the immunity system in a friendly term, and it establishes a new set point, which is the resilient balance setpoint that we're looking for.

And then the nervous Neuro-regulatory systems related to neurotransmitters respond by saying, hey, we're not under a siege anymore. We're now in neuro-inflammation.

You can go back to a friendly architecture, and now you get mood, you can sleep, get outlook, energy, all improving. And that's what we started to see with our work at Big Bold Health, when you put these three concepts together into a program.

we call it actually the immunity plus program, where they actually work together synergistically. I love this. It's this story almost that we're creating here for this sense of the physiology and the research.

You're so great at putting it together in a story of that. We have this immunoregulatory capacity that the immune system has by default, this repair mechanism built in and that, the repair of mechanism is overburdened.

by insult that is exceeding a concept we might call allostatic load. We have too much of a load of, it used to be, I didn't think that infections that were chronic were a huge part.

And the more I've been investigating the medicine and lab testing, the More I realized that there are a lot of antibodies to a of infections and a and there's a combination of infectious load and significance in gut dysbiosis and many other aspects that are within the four pillars or quadrants that you mentioned, behavioral aspects, epigenetic expression, all these things that are creating this allostatic load that's exceeding that repair capacity.

It's not that the repair capability is broken, it's that it is being exceeded by the insult and that is the ratio of the two of insults are higher than.

So we have repair and if we can bring those insult down, that prepare already in and of itself is creating condition in which we can see that greater health and resiliency shine forth as that natural state that the structure has shifted and the function now can reflect this sense of no longer being chronically inflamed and no more longer having

insult to injury creating the sense that cognitive dysfunction and mood dysregulation and other fatigue and pain and whatever other symptoms are playing a role, those are the functional expressions that underlying chronic inflammation due to this insult to injury.

And I love that you've broken it down into the research being able to identify these three main categories of these polyphenolic compounds and bioflavonoids, which We know for a long time have known about these and have studied some of them and there have been lots of papers on these polyphenolic compounds from pomegranate and from certain fruits and certain vegetables that have shown to have really interesting regulatory functions in the gut and to translate that now into the immune function.

And to add that together with these omega fatty acids and how those omega-fatty acids, especially rich in D and A, with the pro-resolving mediators can be something that can also be helpful in regulating that function and to have those categories and then to be able to then say, okay, what sources of these things can people do from the diet through supplementation, through other ways of engaging with these categories?

So what are some of the main things that people are able to do in order to increase their intake bioflavonoids and polyphenolic compounds that have been shown in research and omega fatty acids and these things you mentioned.

Yeah, thank you. Again, a wonderful summary of exactly what I was trying to say. Let me go to a learning that I think we're all familiar with, that bears on this question very nicely, and that's the Mediterranean diet.

If you look at the studies that have been published, now there are hundreds of different studies in the Middle East on people consuming the mediterranean diet, of course the Mediterranean diet is kind of a euphemism because there're many different regions of the metter training and people have different ways that they eat in them.

But the kind concept of A plate that's filled with brightly colored vegetables and fruits and that has newly processed high phytochemical rich things like virgin olive oil, lean cuts of fish and meat, and low glycemic load types of carbohydrate, of the unrefined complex carbohydrate.

That concept. When people have really looked at it from a food chemistry perspective, asking, how does it have all those marked and magnificent effects that it appears to have?

It in part is related, and not a small part, due to the very high level of these polyphenols and bioflavonoids that are found in that kind of diet. And so then you started saying, well, what kinds of pollutants are the highest in these immune strengthening?

And it turns out history is a great teacher.

Practical Programs, Resources, and Closing Remarks

So we go back to. people that have eaten this, almost like the Blue Zones of Dan Buettner saying, you know, where in the world have people eaten things that seem to be associated with longevity and wild disease incidence?

And when you do that, there's an interesting similarity among these Blue Zone areas of the World. And that is that they eat plants that are stressed. They don't have like agribusiness like we have it here in this state with fertilizer, pesticides, and herbicides and all the plants are hybridized and they sit there very quietly and and get tented by all these chemicals that are given to them.

These plants that they eat are rugged. They've had to live out of the natural environment, they've evolved over millennia, and they have developed a ruggedness, which is their immune system.

And those immune systems in those plants are the bioflavonoids and the polyphenols that we're talking about. That's the plants, part of a plant's immune.

And so you go to these places in the world that have the blue zones of longevity, and you find out they're eating diets, like the Mediterranean diet, in its purest form, that are very rich in these specific types of plants.

And one of those plants, which has a 25 to 100 year history that we happened on to, just kind of serendipitously, is a plant that has been consumed as a major foodstuff in the Himalayan region of Asia for, as I said, 2,500 years.

It was actually discussed in The Elder Emperor's Handbook way back when, and it's called Himalyan tartary buckwheat. Tartary stands for the tartar district of China.

And the term buckweed is always kind of a misnomer because it has no relationship to wheat whatsoever. That's not a cereal grain at all, it is fruit seed.

But this particular food, it comes from this plant that's extraordinarily hardy. It grows in bad soils. That actually has an aluminum toxifying mechanism, so it can grow in high aluminum soils, that produces huge amounts.

In fact, between 50 and 100 times the level of immune-sprinking polyphenols as those common wheat. It has high protein levels that are rich in essential amino acid that produces omega-3 fatty acids that's rich and prebiotic fibers, including bicarbonate and oscatol that is very helpful for the microbiome.

Its like the soup for food that has been sitting there and then we say, where is it in the United States? And we can only find one hobby farmer, a former Cornell University and research professor, Sam Deere and his wife Lucia was a nurse, who were growing it on their 10 acre hobby farm in Angelica, New York.

It had been completely lost in America over the last 200 years. No one even knew about Himalayan Tartary Buckwheat. So we now have brought it back into American agriculture.

Our part owners in organic farms that are for the first time producing organic Himalayan Tardary buckwheats. We have a Miller in Trumansburg, NY. developed a milling technique to retain a very high nutrient level that he's calling phenol.

And we have a food lab that's producing recipes and menu guides, and we're out there championing this as a good stuff that can be added into the diet that adds back these values and these nutrients that we've lost years ago as we got into agribusiness farming and got no stress plants and the plants didn't need to make these immune active compounds anymore because they weren't being stressed.

So this is a, oh, by the way, last week, we recognize that healthy soil produces healthy immune systems in plants. So when we did, we just finished the field trial on mycorrhizal inoculation of the soil, and we found that a certain mycrorhizol innoculant of this soil increased the phytochemical levels in our Himalayan Tartary Buckwheat plant.

Healthy soil inopulation produces, healthy roots produces. healthy plants produces as healthy levels, produces helping immune system function. We're really learning that this interconnection between plants, planet, and humans is very real and that we have abandoned, unfortunately, with Edward Business, a lot of this connection that keeps our immune system healthy.

Yeah, absolutely. And so for those who want to begin to, from this perspective, start to work on that immune resiliency and begin to add more polyphenols and bioflavonoids and omega fatty acids and prebiotics and probiotics.

There's almost, it seems like you're saying a diet first approach, we can look at something like a Mediterranean diet, lots of richly colored fruits and vegetables and some sense of there being some omega-3 fatty acid rich foods and Then to on top of that, have these prebiotic rich fibers and potentially probiotic rich fermented foods with dietary approach.

But some people, of course, are have have done a lot with diet and maybe are doing that already, but they're still the allostatic load is still causing them to be struggling with chronic inflammation and mental, emotional disorders

and.

And so you're mentioning that, oh, well, maybe we can take a food that's much more highly concentrated, more like something that was done back in certain Blue Zone cultures that are, Blue Zones are the people who are living a long time and seem not to have this pattern of longevity and health and resiliency and find some of the polyphenolic rich compounds that they're having.

And then in your case, helping to support the production of this in American agriculture and bringing this back. I love that. That's absolutely amazing.

Any other, for people who, you know, they do all that and they're still struggling and wanting or needing some extra support in this system, are there any other just few little things if they want to add something beyond, be it a supplement or a medication or something like that?

In what cases would that be appropriate? And do you have any top things that you tend to find helpful in these cases? Yeah, thank you. So you're really now speaking into this, this program we've been working on, I call that immunity plus programming.

And people can find out about this depending upon their level of geekiness. If they're really a geek and they want a good dive, we have a website that is really designed for the person who wants to dig deep while writing different podcasts and information.

It's www.pro.digboldhealth.com. And it really has a much deeper dive into things that people can and should be doing to put a complete program together.

If a person wants just to be introduced to this topic and they don't want to get quite as geeky, they can go to our just www.bigbowlhealth.com. And that gives more of a kind of broad brush description.

But this immunity plus program is really the program that brings all those four quadrants together that I was discussing. So what kind exercise? What kind eating pattern with regard to circadian rhythms, via time restricted feeding or passing mimicking diet?

What kind of stress management program, what kind relationship does one have to things like music and, and various types of rhythmic functions that repound our circadian process that relates to this connection between our immune system and our nervous system.

So that, that kind complex or quadrant approach is really represented in the immunity plus. And I would urge people to, to click a little bit on our website.

I think you'll find some really great tools there that you can, you geek around with, and this is the whole focus of what we're trying to do. We actually have an app now that's a 90 day program that day by day implements these concepts.

It's called our immunity plus app. So it's the full focus my intention is to try to learn more about how to make this simple and how personalize it and people can access the magic of the wisdom of nature in ways that would really produce balance.

Fantastic. Well, lastly, just to your late 70s, your cognitive function is still there. We met each other seven weeks ago at a conference, so you're traveling, you are doing all this work.

And I've seen you at another conference four weeks before that, and you're just really maintaining a high level of function at your age. And people might be interested in just a brief couple of words about what it is that you are, how do you feel like you able to maintain that?

Is it that your applying the same things that are taught in Big bold health or do you feel like there's something that

drives you is it your passion is that your purpose is a combination.

You share a little bit about that. Yeah, I think you hit it. I Think it's, it' combination of this very deep long spanning belief I have that my life should be purposeful in ways that I can pay for, for the really remarkable experiences I've had, the privilege of experiencing over my 77 years.

And so it is, and it has been really probably throughout all my live, but driving for us. But secondly, I think is making sure that walk the walk and not just talk the block.

I think that it's sometimes easier. You have traveled over 6 million miles. So, you know, traveling has got its challenges. And so sometimes it is more difficult than others, but I've tried very hard to remind myself that I'm only as good as applying that which I am talking about.

That's my strategy. Wonderful. Well, I can feel your heart and passion and purpose, your courage in making multiple shifts that were not logical, but heart-based in nature.

I even see the logo for Big Bold Health Heart with DNA. And I feel that, of course, with medicine with heart as my business as well. So this sense of having this heartfelt courage, this passion, and this purpose and diving deep into research and being a seminal contributor to the field of functional medicine and to be helping to train providers and practitioners and create education is just phenomenal.

So thank you so much for your work. Aside from bigboldhealth.com or pro.bigboldhealth. com, anywhere else people can follow your works, find out more about what you're up to.

Yes, I am the founder, as you mentioned earlier, of the Personal Isolation Medicine Institute. And we have a whole series of free educational programs that we do there.

Our website there is w.plminstitute.org. Or you can just do PLMI on Google and it'll come up and take you to our website and our educational program that you download.

JeffreyBland.com is my kind of legacy material to go back over the last four years. So you can't avoid finding me somewhere, that's for sure. Dr. Bland, I greatly appreciate you taking the time and contributing this valuable information to our audience.

Thank you everyone in the audience for watching this. Take care. This has been another episode of the Microbes and Mental Health Summit. Have a wonderful day.

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