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

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Introduction and Dr. Blandu2019s Background

– 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 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 best selling author, peer reviewed research publications. Over 100 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, dis regulation and immune function dis regulations.

So we're gonna dive into great details. Welcome Dr. Bland, thank you for being here. – What a great treat and privilege to have this opportunity to share with you and visit 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. This is a real privilege. – So 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, it I 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 think my transition, I was I was a professor at the medical school professor starting in 1970 and I had an opportunity, it's actually a life changing opportunity for two years in 81 82 82.

In 83 actually of doing a sabbatical with two time Nobel prize winning laureate, Dr. Linus Pauling his institute in Stanford and I won't go through all of the things about dr pauly and his wife Helen, that uh were remarkable more than just their science, their whole humanism and their whole understanding of how people fit together to create systems that work not just as molecules that make up cells that make up tissues that make up organs that make up whole bodies, but our whole body work together to form enterprises that we call society that are successful.

And they're 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 there, 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 the molecule level right on up to cosmology.

Um I felt that that that concept of getting the structure right in the function will follow was a very powerful conceptual framework upon which to build a view of how life could be improved. And so with coming back from that two years have experienced, um, 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 had a very large research group, I had a young family, I had a mortgage and all the things that real people have living in a life of growing up.

And I made the decision to give up at all. As I was driving with the family home, 1100 miles from, from palooka California to Seattle Washington area where we lived, uh, 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. I had the advantage, admittedly that I had been doing quite a bit of lecturing and traveling before that. And so I had many contacts, contacts around the world that I could kind of use to develop my voice. But it was a pretty bold idea giving up everything and just throwing it all in. It's called burning the boats, you know, I guess is what they say. And it worked out actually very, very well. It wasn't only your path, There were some rocky roads along the road, but I'd have to say that the pivotal uh, 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 very innovation and things.

Discovering Functional Medicine

And, and she said, you know, maybe we ought to host a meeting in which it would be a white board meeting and you can bring some of your favorite thought leaders in and we could just sit and speculate what would an ideal healthcare system look like if we didn't have license, your reimbursement and all the other kind of artifices that lay on top of the business of help. We just kind of structured it kind of with the ultimate goal to produce the most viable system that could support help, 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. It was so successful.

We decided to do it the next year. That was 89 and 1990 and out of that then was born the concept, I actually had 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 what 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's not the most glamorous term.

I said, well, I think it's actually changing with the way that people are now studying function at every level, function at the cell of the tissue, organ and organ system level. I think we can skate to where the puck is going.

And so we, we decided to And inaugurate the Institute for Functional Medicine in 1991, had our first international conference in 1992. And however, 150,000 practitioners have gone through its courses.

So that's, that's kind of a 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 weight, You're 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 heart and passion and and and go in the direction and that led to immense. As you mentioned, over 100,000 practitioners being trained and many more?

It's a, I mean, it's something that that that's going to live on and and trained many hundreds of thousands of practitioners over time and develop a field which is maturing and becoming incredible at this point. And the other part I'd like to highlight is this structure and function piece, which is that there is this 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, the structure is aligned in the way that it's meant to be aligned that the function, the healing process, the energy, the vitality, the cognitive function, the ability to have mood be regulated is the default, the natural, it's the underlying thing. It's not that we have to get there, it's that we just have to uncover it through aligning destruction.

I really like that too because it says it, 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. I think you picked up on it beautifully, exactly why it caught me and has kept me in

trained all these many decades and you know, ironically after we started the Institute for functional Medicine, uh about three years later, one of our senior faculty uh came up and he said, so Jeff do you realize that there was an article published in 18 73 in the Lancet Medical magazine on functional medicine, and I said, oh my word, I consider myself a bibliophile, so shame on me. But I have not seen that article.

It was offered by Dr Willoughby wade wade, who was a senior dean of Birmingham Medical School back in the 19th century. And it was lectures on functional medicine.

And although the language was very 19th 19th century, the concept was very, very consistent with what we thought we were inventing. Obviously, we had the advantage of science having evolved quite a bit since the 1870s.

But the basic structure of the thinking was, it was really, I have to give hundreds to will it away, because I think he really spelled it out quite beautiful in that article and what 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 the Western medical system often parses down into knowing more and more about less and less and specially medicine, so, you start, 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 to find its own resting spot about or equilibrium. And I'm reminded of the term homeostasis because homeostasis is often the walter cannon concept considered to be a when you're in optimal health, but actually you can have home spaces around dysfunction, you can have home spaces around autoimmune disease, you can have homo spaces around diabetes, you can have home spaces around uh inflammatory bowel disease, or I can go down the list of lexicon, um what we really want to be in a state that's um centric around resilience, which is where the body finds its own balance point.

So, 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 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 that we starting actually at the moment of conception, maybe even pre conceptually, that can travel with us to mark our genes the so called epigenetic events that then regulate how our genes will actually be expressed into how we look at and feel. And that is what determines our structure, which ultimately determines our function. So with mental health we start saying, well what are those things that influence the structure that then translate into our function called good days or bad days. And to me uh it breaks down into four modifiable quadrants of structural elements and those are structural elements around your physical structure, um your body and its architecture, ligaments, bones, muscles, all that kind of stuff connected tissue. Um second is your metabolic structure which has to do with things about how your hormones and neurotransmitters and all these kind of geek is um that that I love to get into how they interact with one another.

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

And 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 the brain. So there is a functional connection through the structure of the microbiome and the structure of the nervous system and the structure of the immune system which all crosstalk 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 that we didn't even fill out an application card, there's nothing we can do about it. I know there are many things that we can do.

So the last decade has been truly revolutionary in this specific area to recognize that rather than just treat an individual with the drug that kind of does watch repair with the jackhammer on our nervous system.

This would be a lot of these medications are used to treat the symptoms of neurocognitive issues that we ought to be looking at the root cause that relate to the structural changes that we can modify the microbiome, immune and the nervous system to produce an outcome that's called the right function. So we don't treat the effect we treat the con So that's the basic functional medicine well.

– And it can be surprising to people wait, if I treat my I 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 and it was a leap for a neurologist to study the gut micro And now neurologists are very much studying the gut microbes because there's this direct connection from the vagal nerve signaling from the gut to the brain. That even more signals go that way then from the brain to the gut. And that's been proven over and over with different research and this concept of the homeostasis.

The homey, static 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.

But what on what point where are we referencing that balance? And if that balance is referenced from chronic illness which now the CDC says six and 10 Americans have at least one chronic disease, four and 10 have two or more.

Then a majority of people from the static mechanisms are hinged around the central aspect of a chronically diseased state is what is perpetuated.

Structure, Function, and Mental Health

And when we can see a reflection, it's almost like a mental health concern, depression, anxiety, or PTSD or even cognitive decline and dysfunction, Brain fog or memory issues that start to arise or 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, if we zoom in on the metabolic quadrant, we could say that this gut 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, probiotics, other things that are modulating that gut microbiota and have a shift in their mood that can stabilize around a new homeostasis, a new central balance that maybe is no longer depressed, no longer anxious, maybe is feeling more peaceful, more loving, more caring.

So what of these quadrants And of 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 site, a kind 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 the palace aka ride creating that inflammation or is it because of inflammatory food inputs or the behavioral quadrant?

Are we dealing with behaviors that are perpetuating this inflammatory state or is there 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.

– Yeah, by the way, I think you did a fantastic job of summarizing and very, very plainly understandable language. Everything that that I would like to.

I think that was beautifully said. I think I can add a little color to your summary however. Um, and that is, let's go back if we can, let's 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 think coming out of covid uh if if we are coming out of it, hopefully we are, 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, which would be in the 60s was depression comes the consequence of the imbalance of neurotransmitters because we have these chemicals that the brain produces in different regions of the brain uh from those structures come those functional molecules that have names like serotonin and dopamine and nor adrenaline. Um and these particular bio active molecules operated the synaptic junctions to alter nervous system function and and that has been well explored within experimental neurology and it's the standard of understanding of how brain chemistry kind of starts.

And so people then got onto the thesis that there must be imbalances in these neuro regulatory hormones or neurotransmitters that give rise to the depression and studies were done to look at the balance in different people uh to see if that hypothesis could be correct.

And eventually there was kind of the unified agreement that he was maybe serotonin was a really important one that we ought to be focusing on serotonin 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 trip to paying diets have been found actually. Uh this is particularly Latin America with a lot of corn based diets with low interest payment. They have increased operation and increased suicidal incidents. So they made these comparisons saying, oh this is a serotonin problem.

So the development then was to work on the certain energetic system to treat depression. And ultimately and again, I'm getting into the microscopic kind of views about how we go down this tunnel.

And eventually then it got to the ability to find new to nature molecules meaning synthetic drugs that were very effective in modulating this serotonin related uh network that's in the brain. And they were called serotonin re uptake inhibitors, selective serotonin re uptake inhibitors sa rise.

And so S. S. R. I. S. 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 various pharmaceutical industry every year. And you actually ask in the attempt to treat model saying, how many people would you have to treat to get a positive clinical outcome with these drugs? It's something less than 30 To get uh 10 people to respond. So it's about a 30, you're only getting about a 30% 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 are approved by the government and you've got all these clinical trials on them. So there 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 those, the majority of 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 be approved. That doesn't mean for each individual who has that condition that has been proven it will work.

And in fact, in the majority of people that will not work now, why am I going through that? Because it turns out that only recently, it's been discovered that this energy hypothesis as to how these drugs work is probably not the whole truth because these drugs actually work as anti inflammatory in specific regions of the brain, as you were talking about earlier neuro inflammation, in specific regions of the brain. Maybe the more important cause the downstream relates to these alterations in these neurotransmitters.

So, these drugs, yes, they do modify serotonin, but maybe their principal activity is regulation of neuro inflammation. So that is like uh 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 that 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 propelled state. Let's just talk about the average person.

How does the average person feel? Let's let's assume that they would want to know from their own life experience. Was there some relationship to what I what I just talked about? So let's talk about a person who might have chronic irritable bowel syndrome or chronic constipation.

Um Do these people have any increased prevalence of depression from people who do not have C. I. D. S. Do not have chronic irritable bowel syndrome? And the answer is yes that many, many studies have shown there's a very strong relationship that's called a co morbidity between depression and C.

C. I. B. S. Particularly constipation predominant form of C. I. D. S. Well why would that be? What's the mechanistic link between constipation and between depression?

And you would say well maybe because you have a bad experience when you're constipated that it just makes you anxious and you get depression. Well that that could be one possible explanation but another is maybe there's a connection mechanistic lee at the functional level between what's going on in the gut with constipation and how that triggers in signal to the brain, through the inflammatory processing system that leads to an alteration in the mood, regulating hormones or neurotransmitters that causes depression.

Now, that's 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 uh, take this what I call a hypothesis and show that it's more than a hypothesis, as you already indicated, the gut immune system and the nervous system represents the second brain and therefore we have all these messages going back and forth uh from what is going on in the extraordinary metabolic machinery of this uh complex array of microbes that live in our gut and far more cells in the microbes in our gut than there are in the cells of the human body. It represents one of the largest organs in the body and that's the gut micro environment ways in the average person 3 to £4.

And it has got its own business work. Every one of those organisms in there is creating its own metabolism, its own debris, its own skeletons which are then communicating to the immune system, which is centered in the gut, 60% of our immune system in the gut.

And that immune system is in direct in intimate contact with the brain through the brain's immune system called the Micro Julia and they're all cross talking.

So when you have what we call this bio sis meaning an alteration of the microbes in your gut that is producing a disturbance in their personality. What it does is it creates a disturbance of the personality of your new system that signals it to be in an alarm state, which is called inflammation, which then signals through the brain. And now you have this neuro inflammatory relationship to modulate neural chemicals that regulate mood.

So the mechanism has now started to not being this 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 the, on this gut immune connection to the nervous system function.

And I think back in 1985, oh, my word, that's amazing. And we introduced the term leaky, got back then we introduced the term despite aosis. We were we were ridiculed very, very hardly by the traditional gastroenterological community.

But over time, that concept, in which we ultimately developed a kind of a clinical approach called the fourth program which is remove replace for inoculating repair, which was a way we could teach the doctors how to actually intervene to improve the function of that relationship between the gut, the immune system and the brain, There are literally millions.

Depression, Neuroinflammation, and the Gut-Brain Axis

And I say that without probably hard data, but from experiential information, millions of people that have benefited from that program that for our program that we introduced back in the late 80's and it's all built around this concept. And now suddenly this is the new news.

Suddenly the new news is the microbiome brain and maybe we've been treating depression wrong and so it takes a few years maybe to get the paradigm to shift.

But but I think truth will out in the end eventually if you have the patient. – Yes it is it is becoming more well known. Well understood people recognize the link and I think two concepts 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 said we have this correlative data where we understand that these people who have lower tryptophan diets may have higher incidents and perhaps the tryptophan conversion to serotonin may be why the higher incidence of depression.

And then we give these S. S. Ri these drugs that are that are inhibiting the re uptake of serotonin making it more available. And then we're getting a result.

But is that result of byproduct of a side effect of the drug and not the intended effect but this neuro inflammatory reduction and even some other studies showing maybe some microbiota will modulation even to from S. S. R. I. S.

And so Is it are we confusing the correlation between the results with what's actually causing and has that throne the perception off for such a long time as 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 I had, 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 auto immunity 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 moved this regulation.

Other people experience more minor what most people would be considering. More minor events that are adverse and having more significantly dis 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 is 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 microbiota.

All changes and bacterial changes in the gut may actually make someone less stress resilient in the face of adverse experiences or more stress resilient in the face of the same adverse experience.

So it's not that the adverse experience 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? – But I think that's really very well stated. Um I want to go back to my first concept that there are four quadrants that kind of determined function that that were the physical metabolic, the cognitive and behavioral.

We we 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 we got microbiome and everything else is unimportant. What we say is there's this crosstalk among all these four quadrants that ultimately determine our outcome is called our body function.

So behavioral life experiences are extraordinarily important. They can epigeneticly mark our genes uh, in such a way that they lock us into post traumatic stress with hypersensitivity to to stimulate and keep us in an alarm state. Uh, fortunately all these processes biologically are two way streets. They're not one way streets.

So our challenge is to find this, the street to return back to normalcy and balance and resiliency, uh, and not allow ourselves to be locked into this state of dysfunction regardless of whether it's a behavioral dysfunction of physical or cognitive or metabolic dysfunction. And I think that it's easy for me to say this.

Obviously the language sounds easy, it's clinically more challenging. And I think this is one of the reasons that a lot of people uh tend to be kind of um maybe 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 one thing or one counseling session of one to experience. And it all be made good.

And in most cases that's not the, that's not the outcome. You need this kind of multifactorial approach that looks as where those imbalances are and those triggers are in that individual. And we're all person where unique assets on the diamond of life. Each one of us and therefore there's some general considerations. But then there's the uniqueness of our own individual experience of how our genes matches our life experiences.

So this is both the joy of being in the functional medical 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's like a serotonin problem. So we'll just test a variety of different molecules until we get the right one.

Uh no, we're looking at something that that is both more complex, but it's much more important than 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 a serious suicide. So how do we, 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 modulate serotonin etcetera. Were really actually looking at a paradigm shift of, we're not actually looking at the symptom expression and one layer possibly connected with that. It's this sense of these quadrants that are inter playing together. So there may be behavioral things that have impacted the epigenetic expression, even

ancestral epigenetic expressions playing together with gut dysfunction, playing together with 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 person is thinking and feeling, where that modulation may be helpful as well.

So what would be aside from got work doing some gut testing and treatment and like the four are 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 you feel are really important for people who are struggling with these issues to take a look at and investigate in relation to their mental health picture.

– Yes. You know, it's that question that actually led me in doing something again that probably was not rational, but I couldn't help myself and that is I made, 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 see if I could learn more about that.

So we we formed this company will help about three years ago. I'm very excited. I've got this A small group of extraordinarily dedicated collaborators, about 20 of us now that are really focusing on how can we get the immune system talk favorably to our nervous system and talk favorably to our microbiome. And what are the implications of that would have if we could accomplish that? What type of felt state outcomes could be uh alertness, clarity, sleep, energy, uh immune balance, less auto, pre autoimmune, all those kind of things.

So it opened the door to me to recognize that there are only three things that are speaking in our body 24 73 65 of the outside world. And those are the nervous system, the gastrointestinal postal services when we breathe in or when we consume liquids or foods, all those surfaces are communicating with the outside world like chemicals in the air when we're breathing.

And the third is is our immune system, the immune system. And then you say, well, where is the immune system clustered? And it's clustered interestingly enough in those services that are exposed to the outside world, like the new cultural services of our digestive system, starting in our mouth all the way down to our southern hemisphere and also in our lungs and air wave. This is one of the reasons why SARS COv two had such an impact on our respiratory health because it turns out that despite protein.

Of SARS COv two bound to these days to receptors which are part of the immune system of the uh cultural tissues in our nose, in our airways. And so you have this thing set up for infection. And so the question then that we we raised is are there ways that we 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 gonna call scars from experiences.

That could be chemical insults. They could be behavioral insults, they could be nutritional deficiencies. They could be related to gut microbial toxins.

Like you mentioned liberal colleagues Ackroyd's from gram negative bacterial cell walls that are produced. There's a whole array of different substances that could um injure the immune system. So I have 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 uh members those injuries, it becomes what is called, it doesn't necessarily age the same as our age of birthdays. It can age faster than our age and birthdays.

We now know from SARS cov two infections in Covid 19 patients that 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, uh immunological research over the past 10 years has identified that there are biological processes going into our body to rejuvenate the immune system.

The problem is if we're damaging the immune system and giving a bad XP we can rejuvenate it a decline. But if we can lower the rate of injury to our immune system while then activating what we call the immune rejuvenation system, then we can actually recreate naive healthy immune cells.

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

And we have the option to make them better. So that became our focus in big bold health. Could we find ways of actually enhancing the rejuvenation of the immune system to speak to the nervous system and the microbiome and friendly turns and that led us into the recognition. Ultimately, when I say, I really I should give credit to there's a large body of other people that are working on this is not just us, but the group of scientists in the world that are working on this problem have have kind of all collaboratively found out that there are three things that we can do to help to rejuvenate the and their related to Specific families of polyphenols and flavonoids found in certain foods that have a unique immune rejuvenating capability.

two are specific types of probiotics and and probiotic organisms that I guess you'd call them symbiotic that work together that actually uh create an immune rejuvenating outcome to our immune system.

And then thirdly, our omega three fatty acids, specifically fatty acids that are rich in vitamin C, vitamin A. And rich in these pro resolving mediators.

What are created as PR ems that have these immune rejuvenating effects.

Immune Rejuvenation and Nutritional Strategies

Those three uh column pillars uh become foundations for nutritional intervention for rejuvenating the immune system such as it will speak to the gut microbiome in friendly terms, the gut microbiome speaks to the nervous system and the immune system in friendly terms.

And it establishes a new set point which is the resilient balance set point that we're looking for. Um and then the nervous system, no regulatory system related to neurotransmitters respond by saying, hey, we're not under siege anymore. We're not a neuro inflammation.

We can go back to a friendly architecture and now you get mood, you get sleep, you get outlook, you get energy all improving. And that's what we started to see with our work at big bold help.

When you put these three concepts together into a program we call it actually community 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 regulatory capacity that the immune system has by default, this repair mechanism built in and that the repair mechanism is overburdened, bye insult that is exceeding a concept.

We might call our static load. We have too much of a load of it used to be. I I didn't think that infections that are 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 lot of infections and a lot of people. And and there's there's a combination of infectious load and significance and gut despite aosis and many other aspects that are within the four pillars or quadrants that you mentioned behavioral aspects of the genetic expression, all these things that are creating the sound of static loads exceeding that repair capacity is not that the repair capacity is broken.

It's that it's being exceeded by the insult and it's the ratio of the two. The insults are higher then so we have repair. And if we can bring those insults down that repair already in and of itself is creating this condition in which we can see that greater health and resiliency shine forth as that natural state that the structure has shifted in the function now can reflect this sense of no longer being chronically inflamed and no longer having insult to injury, creating this sense of the cognitive dysfunction and the mood dis regulation and the 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 polyphony olic compounds and bio flavonoids 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 policy phenolic 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 bio flavonoids and polyphenols compounds that have been shown in research and omega fatty acids and these things that you mentioned?

– Yeah, thank you again, that wonderful summary, exactly what I was trying to say. Um let me go to a learning that I think we're all familiar with, that, I think bears on this question very nicely.

And that's the mediterranean diet. If you look at the studies that have been published in other hundreds of studies, different studies that have been published on people consuming the mediterranean diet, of course, the mediterranean diet is kind of a euphemism because there are many different regions of the mediterranean and people have different kind of ways that they eat in the mid, but the kind of concept of uh a plate that's filled with brightly colored vegetables and fruits and that has uh minimally processed, high photochemical rich things like virgin olive oil, uh lean cuts of fish and meat and low glycemic, low types of carbohydrate of replying complex carbohydrate.

That concept when people have really looked at it from a food chemistry perspective, asking how does it have all these magnificent effects? That appears to have it in part is really not not a small part due to the very high level of these polyphenols and that are found in that kind of diet.

And so then you start saying, well, what kinds of foods are the highest in these immune strengthening flatlines. And it turns out history is a great teacher.

So we go back to people that have eaten this almost like the blue zones of Dan Buettner and saying you know where in the world have people eating things that seem to be associated with longevity and disease incidents and when you do that there's a 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 the states for fertilizers, pesticides and herbicides and all the plants are hybridized and they sit there very quietly and and get tended by all these chemical that are given to them.

These plants that they are rugged. They had to live out of the natural environment. They have evolved over millennia and they have developed a ruggedness which is their immune system and those immune systems and those plants are the flavonoids and polyphenols over time. But that's that's the part of the plant's immune system. 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 and purest form that are very rich in these specific types of plants.

And one of those plants which have the 2500 year history that we happened onto this kind of serendipitously there's a plant that has been consumed as a major foodstuff in the Himalayan region of of Asia for as I said 2500 years. It was actually discussed in the yellow Emperor's handbook way back when and it's called Himalayan Tahr Cherie buckley to artery stands for the Tartan district of china.

And uh the term buckwheat is always kind of in this number because it has no relationship to wheat whatsoever. It's not even, it's not a cereal grain at all.

It's a fruit seed. But this particular food, it comes from this plant that's extraordinarily hardy. It grows in bad soil. It actually has an eliminating toxic firing mechanism so it can grow in aluminum soil that produces huge amounts. In fact between 1500 times the level of immune sprinting Filipinos. As this common what buckwheat.

It has high protein levels that are rich in essential amino acids that produces omega three fatty acids. It's rich in prebiotic fibers including pekearo and hospital that are very helpful for the microbiome.

It's like the super food that's been sitting there and then we say where is the United States? And we can only find one hobby farmer, A former Cornell University and research professor Samir and his wife was a nurse who are growing on their 10 acre hobby farm in Angelica New York.

It has been completely lost in America over the last 200 years. No one even knew about. So we we now have brought it back into American agriculture, we are part owners in organic farms that are for the first time producing organic Miller in Angelica, in Sydney, Truman's Berg New York that's uh developed the milling technique to retain the very high nutrient levels of these polyphenols.

And we have a food lab is producing recipes and menu guides and we're out there championing this as a foodstuff that can be added into the diet. That adds back the values of these nutrients that we've lost years ago.

If we got into agribusiness farming and 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 and by the way lastly we recognize that healthy soil produces healthy immune systems and plants. So when we did we just finished the field trial on micro cell inoculation of the soil. We found that a certain micro Rezulin occupant of the soil increased the photochemical levels in our Himalayan territory buckley plan.

So healthy soil inoculation produces healthy roots, produces healthy plants, produces healthy levels, produces healthy immune system function. So we're really learning that this interconnection between plants planet and humans is very real and that we have abandoned unfortunately with agribusiness uh a lot of this connection that keeps our immune system healthy.

– Absolutely. And so for those who want to begin to with this perspective start to work on that immune resiliency and begin to add more pollen phenols, and bio flavonoids and omega fatty acids and probiotics and probiotics.

There's almost, it seems like you're saying a diet first approach, we can look at something like a mediterranean dialogues of richly colored fruits and vegetables and some sense of there being some omega three fatty acid rich foods. And then too on top of that have these prebiotic rich fibers and potentially probiotic rich fermented foods.

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

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 or the people who are living a long time and it seemed not to have this like pattern of, of longevity and health and resiliency and find some of the

pollen phenolic 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 in this system.

Are there any other just a few little things if they want to add something beyond being 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 called an immunity Plus program and uh people can find out about this um depending upon their level of geekiness if they're really a geek and they want to dig dive.

We have a website that is really designed for. The president wants to dig the variety of different podcasts and information. It's uh www.pro.bigboldhealth.com And it 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 it quite a dP, they can go to our this www.bigboldhealth.com And that gives more of a kind of a 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 of exercise? What kind of eating pattern with regard to circadian rhythms to time restricted feeding or fasting, mimicking diet? What kind of stress management program?

Purpose, Longevity, and Closing Resources

What kind of relationship does one have to things like music and and various types of rhythmic functions that re pattern our circadian process that relates to this connection between our immune system and our nervous system. So that that kind of complex or quadrant approaches really represented in the immunity plus.

And I would urge people to take a look at our website. I think you'll find some really great tools there that you can you can get around with and and this is the whole focus of what we're trying to do.

But we actually, I have an app now that it's a 90 day program that day by day implements these these concepts that's called community plus app. So it's a full focus of my intention is to try to learn more about how to make this simple and how to 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 your late 70s, your your cognitive function still there. You're really, we met each other seven weeks ago at a conference.

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

Is it that you're applying the same things that are taught in big bold health or do you feel like there's something that drives you, Is that your passion?

Is your purpose? Is it a combination you share a little bit about that? – Yeah, I think you you hit it. I think it's it's a combination of this very deep longstanding belief I have that my life should be purposeful in ways that I can pay forward for the, the really remarkable experiences I've had the privilege of experiencing over my 77 years and and so it it is and it has been really, probably throughout all my life, but driving for us, but but secondly, I think is making sure that I walked the walk and not just talk the walk and uh I think that it's sometimes easier to have traveled over six million miles, so, you know, traveling is got its challenges and so sometimes it's more difficult than others, but I've tried very hard to remind myself that I'm only as good as applying that, which I'm talking about.

So that's that's my strategy. – Wonderful. 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 heart for big Bold health heart with DNA and I feel that of course with medicine, with Heart is my business as well. So this, this sense of having this heartfelt courreges passion, 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 work, find out more about what you're up to. – Yes, I am the founder, as you mentioned earlier of the Personalized lifestyle Medicine Institute, we have a whole series of free educational programs that we do there on our website. There is at www. PLMInstitute.org PLM Institute or you can dispute PLM eye on google and it will come up and it'll take you to our website and our educational pro uh programs that you can download.

And then, and then lastly, I have Jeffrey Bland.com with my kind of legacy material that goes back over the last 40 years. So you can't you can't avoid finding me somewhere that's for sure.

– Well, 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 microbes and Mental Health Summit. Have a wonderful day