How Foods Influence Neurotransmitters, Immunity And Cognitive Function

Diane Mueller, ND, DAOM, LAc
with **Cheryl Burdette, ND**

Diane Mueller, ND, DAOM, LAc
Hey everybody Dr. Diane Mueller here, Welcome to another episode on microbes and mental health. I am thrilled to introduce to you the next speaker, Dr. Cheryl Burdette, the founder of precision labs. Welcome to the summit Dr. Burdette,

Cheryl Burdette, ND
Thanks so much for having me.

Diane Mueller, ND, DAOM, LAc
So tell us a little bit about yourself how you got into the world of medicine and creating lab companies and all these different things. Tell us about your background.

Cheryl Burdette, ND
Yeah, absolutely. So cruising along in college, I imagine like many of us did and double majoring in Premed and psychology and somewhere along the way, thought surely these things are connected somehow some way. And took a really interesting class called self regulation, bio feedback and meditation. And that professor talked about the extreme power that the mind has over the body. And I was involved in conducting experiments with some of the college students and we would pull them into the lab and put electrodes on their fingers and then we would tell them to either take their body temperature up or down. And when you, when their temperature would go up, they get these little red blocks, that's the biofeedback something giving you feedback about your bio, your life yourself or down. And then they went blue and we had them come in every week in practice and when they did that and they got a dollar for every degree they could take their temperature either up or down. And so when they did that you could watch people shift their body temperature a couple degrees up, take it back down to normal, lower it again and it just blew me away that if we could control something as seemingly so that's so seems out of our control like body temperature to that degree. It really very profoundly

demonstrated to me the effect of mind, body connection and of course the more practical research with on that side of things, probably not many of us need to switch our body temperature that much, but we went on to do hypertension studies and of course this is one of the key things that we can do to control anxiety and how we feel if we can train the brain to to to be able to turn on these pathways at will, how, how root causes that.

It's so fun the middle to what we do. So from there said surely these fields connect somehow. I would like to engage in a medicine that recognizes the connection between the brain and the rest of the body. And it was enough years ago that there were no getting online, I went to Peterson's college guides and found naturopathic medicine. I had no idea what it was. I'm from Alabama. I was at U A. B. And I've never had seen a naturopathic doctor I heard of one but thought this sounds like a great idea. So I went off to Nastier and Nastier here is one of the four or five naturopathic medical schools that we have in this country right now. I was lucky enough to be there then did my residency at cancer treatment centers and then came back to be in practice in Atlanta Georgia. Wanted to bring some of this medicine back to the south since it's not well known here. And as I was in practice at Progressive Medical which is a very large integrative clinic, there's even 10 15 dots.

We all worked together under one umbrella. Really seeing okay the tools that we have are good but some things are missing and so and I had a background in laboratory studies and so I went to my partner Dr. Geza Goalie who owns Progressive and I said you know what we should start a laboratory because there are things that that we need to help patients get better that I can't find. And so an example of that is we all know about lipids, we all know about cholesterol but yet what if you really dig into a plaque? What you see is this Oxidized LDL And not just that standard cholesterol that we hear about. Well oxidized LDL turns out at 17 times more predictive for heart disease than cholesterol turns out that you use anti ah accidents like coQ10 to lower it. So it guides us in terms of treatment as well. But at that time you couldn't order it from a place like a lab corps or request. And so I would see these markers that were so heavily researched but not available because many times they meant that you did things like give a nutrient or change diet and so these weren't considered treatments by standard of care as much. And so they weren't pursued as often and so said, you know what? There's so tools missing that we need. So let's start a laboratory that's focused on areas of integrative functional naturopathic medicine and make sure that we have meaningful markers that are really moving the conversation forward.

Diane Mueller, ND, DAOM, LAc
I love this so much and since the topic is microbes and mental health, we're talking about this, you know, physical thing in this mental thing, right? So it's so amazing that love for medicine like

really flourished out of this beginning of seeing that link that you know, it's still, I think oftentimes not accepted but we're getting we're getting closer, there's a lot more awareness. So it was really, really excited. That was your foundation. Yeah.

Cheryl Burdette, ND
Getting better. Yeah, but not there. Yeah. I think so many people more led to believe that these things are outside of their control that they that it has to be a prescription and a pad controlled by somebody else rather than really learning, you know what the body is capable of and how we can put ourselves back in balance. So I guess the style of medicine has always appealed to me.

Diane Mueller, ND, DAOM, LAc
That's so good. It's so good and I want to start our conversation really with the foundation of linking. We're gonna talk about food re activities and food sensitivities and talk about a lot of different markers that I think a lot of people are not familiar with yet. And before we go down that road, I want to root us in the connection between what is happening with food reactivity, the connection between that and inflammation in the gut and the connection between that and mental health. Can you kind of tie all that together for us?

Cheryl Burdette, ND
Yeah, absolutely. And so I think the data does a really good job of that. If we were to go to pub med where all the peer reviewed research is, and if we put in keyword searches like irritable bowel syndrome and depression, irritable bowel disease and anxiety, what you would see routinely is studies that say when there's more incidence of irritable bowel disease, there's also an increased incidence of depression or anxiety. And so right off the bat, we see this connection between inflammation in the gut and also things that are happening in our brain. And this has to do with evolution. And so that evolutionary tendency is that these that the bugs in our gut have evolved with us for thousands of years and when the bugs in our gut are healthy, that sends a signal along the vagus nerve.

And so there's this nerve that connects the brain to the stomach. And so there's this conversation that we've always had in terms of okay maybe you're going to take something orally and and the idea is that it's going to influence the brain. So an example of that might be a supplement called Gaba and Gaba is our inhibitory neurotransmitter. It helps with rest and relaxation. It's something that we want to increase to help with anxiety to get the brain to calm down. And so there's this conversation of if I take it orally will it get absorbed and will it even cross what's called the blood brain barrier to make an impact in my brain. And I'm gonna table that for a second. But even outside of that, even with no movement across the blood brain barrier and it looks like

there is some but it turns out that one of the best ways to produce Gabba is actually our good healthy flora And one of our our favorite good guys that associated with anti aging and longevity and decreasing sensitivities to food and auto immunity is one called bifida factor and bifida factor in our gut. Makes Gaba. And that Gabba even before it's absorbed, communicates with the vagus nerve and says ah what's happening in my belly is good, I'm calm, I feel better and so this connection but between the microbiome and neurotransmitters is deep when we look at things like lactobacillus it makes more serotonin, okay that's the one that helps with depression and again anxiety and so we have evolved so that when we have the right microbiome, the good guys intact, it tells our brain, yep everything's going well. And conversely, you know, if we were to get some type of food poisoning for example, well then we're we it competes with that bifida factor and that lactobacillus and so we make less of those neurotransmitters.

And that is because evolutionarily speaking if you have an infection you need to disassociate, you need to stay away from the rest of the tribe, you need to go back to the back of the cave and not give everything to everybody else and not spread the infectious disease around. So we evolved this way, but now unfortunately it's not just about food poisoning and dysentery, but it's about how our modern food supply is. And so we are confronted with overly processed food that does not help the microbiome antibiotics that are in our meats that kill off our good healthy flora, more daily stress, that decreases blood flow to the gut, puts us in fight or flight, not in rest and digest. And so all of these things upset our natural microbiome and many more like you know, maybe not being able to breastfeed or a vaginal birth or I mean we just go down the list of what modern society gives us and it is an assault on our microbiome. And so many people are sitting around with lower bifida backed or lower lactobacillus, a compromise microbe. And so consequently making less neurotransmitters and that, you know, like we've all heard of melatonin, that's the one that makes us sleep well, we produce 400 times the amount of melatonin in the gut than we do in the brain. So really, when we say I have a gut feeling, there's a lot of reality to this. And so if our microbiome is upset, our brain is upset too, and that's how we've evolved to be.

Diane Mueller, ND, DAOM, LAc
So in summer, it sounds like what we're saying here is there's a lot of things that can basically disrupt the microbiome and in particular lacto and bifido but you know when we're talking about brain health, but when the microbiome gets disrupted by all these different factors, then we change our neurotransmitters when we change our neurotransmitter load, that's the relationship. One of the links we can say between anxiety, depression and all the various different mental health disorders, correct?

Cheryl Burdette, ND
And then we add to that, like I was mentioning our food supply and maybe overly processed food, but let's even say, you're out there, you're like, okay, I know that something is not working, right? And so that's our instinct to write when you meet with patients, one of the first things they want they ask is what should I eat and we all know that by changing dietary choices. This is something that we can do for ourselves to help us to feel better. But however and so let's say you've got that person they came in and they've been working really hard on their diet. They are eating more vegetables. They are eating more fruits and they're still not getting there. Unfortunately our immune system can get confused in terms of how it reacts to foods. And when that happens we start to make antibodies IgG G antibodies even I G. E. And a body. So allergies and what are called sensitivities and when this occurs it creates inflammation in the gut and so inflammation in the gut is like trump and you're stomping on your garden, your microbiome garden. And so if we're even when we're making what we feel like our good healthy choices for ourselves if it's a food that's begun to confuse our immune system that creates inflammation and it makes it harder for our microbiome garden to flourish like it should.

Diane Mueller, ND, DAOM, LAc
Okay awesome. So I think that's helping everybody make the connection between food inflammation and the subsequent down you know stream effects on their brain and obviously so many other parts of their body help us because I know in my clinic one of the things that people are often confused about is the differentiation between a food allergy and a sensitivity. Can we go into some of that.

Cheryl Burdette, ND
Yeah absolutely And so so many people will go yeah I know something I'm eating it doesn't feel right I feel worse Maybe I'm maybe I can't quite pinpoint it and sometimes you can pinpoint it. You figure out oh yeah every time I eat bread I don't feel as good or dearie I don't feel as good. And so you say okay I'm gonna go get to the bottom of this. I'm gonna go out I'm gonna have a test on I'm gonna see if I'm allergic to foods. And that can be done a couple of ways. You what people maybe like a stick test where you stick little bits into the skin and you see does it swell and turn red? Or you can draw your blood and you can measure it that way. You're looking at roughly the same thing when you do that. But that is looking at an allergy. And so what the journal of immunology says is when you have a reaction to foods only 50% of the time will it show up as an allergy? So we know that it's traditional allergy testing misses at least 50% of the reactions that are out there. And that's the best allergy test. You know that is just that's just the that's where the data is at. So we know 50% of the time something else is happening. And so for many people they don't have this an allergy what they have is a sensitivity and it's mediated by a

different part of the immune system. So allergy is mediated by something called an I. G. E. And a body and it creates this immediate response. You eat the strawberry, your lips swell, you eat the avocado, your tongue gets itchy and it has happens within a quick amount of time. But maybe you just know I just feel this general malaise and some days are worse and yeah maybe it's after I eat some things and it's not an immediate reaction.

Well then that's likely to be a sensitivity. And those R. I. G. G. Reactions and sensitivities happen 3 to 72 hours after you eat the food. So you might be thinking oh I'm having a bad day, what did I eat for breakfast? And it's actually what you had for breakfast three days ago. And so these sensitivities can get difficult to tease out from just a dietary history alone and then add to that. Maybe you have some sensitivities that are kind of moderate but you eat all three of them on the same day and you eat more than you usually do. Okay now you're like well when I ate oranges the other day I didn't feel bad. But today you have the oranges and the banana that you're sensitive to and the peanuts so they can have this cumulative effect as well. And so sensitivities they don't instantly kill you. You don't go into anaphylaxis. You don't need an EpiPen to pull you out. You're not gonna get shortness of breath. But they do create this ongoing inflammation. And I like to think of like inflammation, like a fire that's brewing and can either kind of slowly cook your genetics or if we can tap down that fire, keep your genetics nice and healthy. And so they aren't all, there also aren't tied to a particular symptom.

Like when we think allergies, you think swelling or you think rash there is a particular symptom, but inflammation can flare. Almost any symptom inflammation can flare almost any pathology. And so the more inflammation you have, the more chance you have for the fatigue to be worse. The headache to be worse, the stomach ache to be worse. But glass half full, the less inflammation, you have, the more opportunity you have to put those things in remission. And so they don't kill you instantly. But I still don't want to give the impression that they don't have a strong impact because for example, I can think of this,, a 16 year old and she was in horrible pain cost Akane dry tous. And so she was already walking with a cane and she was told her next step would be a wheelchair and even more pain meds and so it was just a really miserable place for anyone, particularly somebody so young to be. We figured out she didn't have an allergy but a sensitivity to wheat gluten. And when she pulled that out of her diet, no cane, no pain meds and a resumption of quality of life. So it wasn't something that was killing her instantly. But it was certainly robbing her quality of life, significant quality of life. And so they do have a great impact. It's just a different kind of presentation and mechanism of action.

Diane Mueller, ND, DAOM, LAc
Yeah, thank you for throwing that story. And I've seen that too in my clinical practice where somebody is in a wheelchair, not because of paraplegic just because of such bad inflammation, they can't walk and we get this stuff out and all of a sudden the wheelchair goes away right? It's so it's such cool, cool work. So I want to go deeper into a couple of questions based upon what you said. I want to go deep into just kind of differentiation here between allergies and sensitivities and throw in. I know some people are thinking about this elimination diet and you know the big question is with this right like well what about the elimination diet? When can I do that? Why would that be valuable? Why would testing be more valuable? Can you cover a little bit about that for us?

Cheryl Burdette, ND
And I and I think that elimination diets can be quite useful and in fact I even though you know co founded precision point diagnostics and we do do food allergy sensitivity testing. It's a panel that looks at all those together. I still routinely use elimination diets. And so at progressive medical what we will often do is have people come in, we start with an elimination diet and we also draw blood and we see what kind of progress we get and they do an elimination diet for 2 to 4 weeks. And then when they come back we have the blood results so we can tailor the diet from there. But I encourage anybody out there who is feeling suboptimal, even if you're feeling optimal to try an elimination diet and a standard elimination diet is typically going to have you take out things like dairy gluten, often caffeine, alcohol and then sometimes some of the more common allergens. And these can vary from diet to diet but corn soy peanuts leaving out some good ones. So those are you know, you'll you'll see some variation around that but and another rule of thumb is anything you eat a lot of you take out during an elimination diet and see how you do and if you notice improvement from that, you're likely to notice even more improvement when you find out specifically what are the foods that you are reacting to. So an elimination diet does that. It just says here's some likely targets of things that tend to be more inflammatory gluten or from wheat and other grains as well.

And dairy are two of your biggest inflammatory molecules out there. And so it's let's just do a presumptive trial. But then we can step in and say, okay, but what exactly is your body reacting to? And the benefit of this is, is that oftentimes you'll find their foods that are otherwise healthy that you are reacting to and the more you can take out the foods that you specifically are reacting to, the faster time to recovery. So if I take out some foods I'm reacting to, but I'm still eating others and they're still creating inflammation in my body. They're still knocking down my microbiome. It's going to take me longer to get there. If I can figure out exactly what my body reacts to remove those from the, from the diet and probably do some things to build up the gut

and build up the microbiome alongside that, then I can move my clinical progress much more quickly. And I'd like to add in the sensitivity and allergy testing, we call it the P 88. And the reason I like to add that in addition to those things is that for me and patient care, the goal is not to have to remove things for forever. In fact, I like to use these tests to be able to hopefully open up the diet to more foods without feeling inflammation from them, without feeling pain with them. With some caveats, we're probably never gonna have somebody going back to highly processed wheat all the time again, we're probably always going to have them at least minimize dairy because again, those two are just a little harder on the system, regardless of allergies and sensitivities, but if I can really clean out the things that one is inflamed too and do some things to build the microbiome, then when you reintroduce, you are likely to be able to eat more foods without restriction rather than less and with just an elimination diet, it's harder to get to that to end goal. But by all means people should experiment with taking out things that they eat a lot of and they should practice getting a variety of foods and a varied diet. And so it's not one or the other and in fact you can often use them in conjunction.

Diane Mueller, ND, DAOM, LAc
Perfect, awesome. And I'll add in the one that I know when you're like, I think I'm missing something dairy is the one that I know you take out, that you did not say so I'll throw that in there and then to go on from here, can you talk to us a little bit about complement and the complement system and inflammation and how that's connected to the food world because it's a different way of reacting to food that I don't think a lot of people are familiar with.

Cheryl Burdette, ND
Yeah, so as science progresses, we figure out new things about the immune system, we figure out new things about the body in general and we're able to detail are testing to address that. And so I always think a good example that people are familiar with is that if I were going if I were your cardiologist 40 years ago that I would only measure cholesterol. But everybody knows if they go in today they get colette. All they get L. D. L. I always say the lousy cholesterol. HDL the healthy cholesterol. And you get these various types because and I even mentioned oxidized LDL earlier you get these various types because they're more predictive. And we can even do things like look at particle size and buoyancy and you know and so we learn these things that give us more clinical information. Well the same is true with how we react to foods. We know like I said that allergies only give us a picture of a reaction to the food 50% of the time. So we figured out there are other ways that the immune system gets confused. We make I. G. Antibodies those are allergies. We make I. G. G antibodies to foods. Those are sensitivities. But then we also can make complement that specific to food that amplifies that reaction. And so compliment as part of the immune signaling. You know when it's referred to as the complement cascade and when

different white blood cells get together they send out signals that break these break down the larger complement molecule into these smaller little bits that say oh my gosh we're really under attack here get more white blood cells to the area where we we we got to pull together and so we can fight whatever is going on out there. And that's great if it's an infection unless it's too much. And we all learned about that like a cytokine storm is driven by compliment. And we learned about that through the past couple of years in terms of covid and then you know up to a point that's great for an infection.

It's not so great if the immune system is confused and now it's fighting a food instead of a bug it really doesn't do us much benefit to fight a strawberry or a piece of lettuce or whatnot. And so what we learned is that yes these I G. G. Antibodies are part of that immune response. But in addition to that if we also trigger complement they ignite they bind together and they create a much more inflammatory reaction. So historically speaking I mean if I talk to you about what you were doing in practice 10 or 20 years ago you would probably say yeah I was looking at I G. G. And so and so was I. But then we figured out if we look at I. G. G. Y. As well I. G. The allergies. But then if we look at sensitivities I G. G. And then also look at this compliment piece we can really see where the more inflammatory reaction is at. So simply put I. G. G. E. In the presence of compliment. They'll bind together and they create a much more inflammatory reaction 1000 to 10,000 fold. And so what we've learned is there's multiple ways the immune system can become confused by foods and it creates not just one response but a number of responses. And if we look at all of this together we get a much more complete picture.

Diane Mueller, ND, DAOM, LAc
Thank you and and just bring this kind of first full circle for everybody listening. I hope everybody listening is really understanding that you know we're linking this inflammation from the gut from foods to inflammation in the body inflammation in the brain. Right? So that's your connection point again and when we're talking about this complement system a lot of what Dr. Burdette's really sharing with us is that there is. We got to get away from this like simplicity of lab test right? That the lab test is only as good as with the lab test is measuring because essentially what you're saying here right is that we could have a very very say mild sensitivity from an I. G. G. Perspective. But if we also have a high amount of that complement then all of a sudden that mild reactivity actually can turn into a pretty significant reactivity that would have gotten missed if we didn't test for the compliment. Right?

Cheryl Burdette, ND
Absolutely perfect. Yes a very good clarification there. And so just like you know 40 years ago maybe we would have only looked at something with an X ray. Now we can do MRI's that give us

much more detail and we get more detail. We can have more specific findings and we can move the conversation forward and that we can have better treatment to address these things. That's another piece. If you see lots of compliments we know to reach for things in our arsenal to deal with that. Not just the food removal but Kirk Humanoids from tumeric are very good at lowering this complement. So it gives us more clinical direction as well. More opportunity to calm down these reactions to foods. And like you said when we can eat the foods that are low inflammatory it creates an environment that our microbiome these good healthy bugs really thrive and really make our whole body feel better.

Diane Mueller, ND, DAOM, LAc
Perfect. And I want to move on to I. G. Subtypes. So just for everybody listening I. G. These are antibodies are proteins the body is making that are reacting to things like this like food. So with I. G. This antibody we have subtypes. Can you talk to us about the different subtypes? Because I think this is an area that a lot of people are not aware of yet.

Cheryl Burdette, ND
Absolutely. And so maybe you we even had this experience you worked with somebody in the functional medicine space and they cleaned up your diet And then you went to see possibly another practitioner and you explain this thing about sensitivities and they said well that's that's not in the research or you know that's that's that's that's not what the science says or what not. And first of all that's a pretty dated answer. So if again if I go to pub men and I look at I. G. G. Food sensitivities there's a lot of data around this if we do about 20 years ago less. But it's the science has really caught up in terms of what we've known clinically for quite some time. But then sometimes people will say oh well sensitivities that's G. G. There are different types of I. G. G. So to look at all of them together is really a clinically confounded picture and that's not wrong. So sorry for the deep dive into the science here. But in terms of I. G. Antibodies there are actually four to types I. G. G. Subtype 123 and four. And so if it's fine to measure them all together if they all did the same thing but they don't do the same thing. In fact I. G. G. Subtype four to something very different. So I G. Subtype 12 and three.

These kind of act together. Some respond more to protein some more to polish sack rides some to both. But they bind to complement, they create inflammation. They kind of all pull in the same direction. But I. G. G. Four is the oddball of the family and it it does it's not the same shape, it's not the same size, it's very tiny. It doesn't bind to complement, it doesn't create a lot of inflammation and in fact it does something pretty pretty unique and helpful. I. G. G four will slot into that receptor where I. G. E. Was going to bind and block it from binding. And if you block I. G. E. From binding then it can't do its job. And that that job is to tell a besa fill or a mass cell to burst

open and release histamine. So I. G. G. Four is able to block the stimulus that causes all the histamine to get released. And there's really a good depth of research around this what comes to us from the desensitization literature. So if you have ever known someone who's done desensitization injections or we can also do it through sublingual immunotherapy drops under the tongue. The whole point of that therapy is to increase I. G. G. Four. It doesn't lower I. G. It in S. I. G. G. Four to block I. G. From binding to decrease release of histamine. So if someone says oh well you can't just measure I. G. G. They do different things. That part is accurate but if you tease them out the ones that do something different. Well now you're getting a really complete picture because now you're seeing okay are you allergic? Have you developed tolerance? And that's the I. G. G. Four or are you still in that world of sensitivity? So that's the subtype 12 and three. And what about complement that amplifies all that as well? So as we've learned more about the immune system we know there's multiple ways the immune system can react. And so looking at all those things together gives them much more complete picture.

Diane Mueller, ND, DAOM, LAc
So what are the things that some other people in the summit are talking about is going to be MCAS and histamine intolerance. So people are going to be hearing about how these high histamine levels are actually contributing to mental health issues. So my question is when we're saying I. G. Floor and when the body is reacting to say a food by producing more I. G. G. For antibodies which essentially block histamine for somebody that is in a mast cell activation state or for somebody that has high history load, would it be a benefit to them to say focus more on those I. G. For you know the foods that are producing higher I. G. G four levels.

Cheryl Burdette, ND
The more they can improve I. G. G. Four the more they're going to be able to block those allergies. And so and yes one way to do that is desensitization. But therapies like probiotics increase something called L. 10 and that tells us to make more I. G. G four a mega three fatty acids help us to make more I G. G four as well. So when we look at some of these things that we routinely do to help the gut it also helps to make these less inflamed antibodies and it helps us to gain tolerance as well. And the history that you bring up is very interesting. At the beginning. I was focusing on neurotransmitters in the gut and how they act in the brain about europe but the but the conversation around histamine is no different history made in the gut also has activity in the brain and I always find it fascinating that you even measure levels of histamine to to hone in on even a diagnosis of something like schizophrenia but even less or that you know or not maybe not but less extreme than that Histamine of course in the brain can make us have headaches but make us feel more agitated, anger anxiety and so these things that we think

maybe work only one place or the other really know the whole system is connected and you find receptors for histamine in the brain as well.

Diane Mueller, ND, DAOM, LAc
Super helpful and to circle back to other things you've mentioned. So you talked about how this is a you know the testing is an idea or a way where we can get people to open up their diet more. So let's say somebody is really good about being off their food and about following the results of the task. How strict do people tend to need to be in order to say reset their sensitivities and when you typically recommend retesting.

Cheryl Burdette, ND
Well, unfortunate for being humans and not being perfect, the more strict we can be the better. Now. That's not to say if you have one little slip up somewhere that you're all the way back to square one, that's not the case. But really the more dedicated you can be, the more you're going to help the immune system to be less confused and help it to reset. And so not only do we want to take these foods out, but especially someone who's more severe, it's not an overnight thing. Now you'll start to feel better pretty quickly and I'm sure, you know, we see patients feel better, you know, a few days, a couple of weeks and certainly a month. But if we're really trying to retrain that immune system, then staying off those foods for even 6 to 9 months is really probably more the target. Now, some people maybe you're less severe that is just feeling a little more worn down. Three months might be adequate.

But what we're trying to do is re train the immune system and when you think about something like desensitization that's often done for even as much as two years to have the desired effect. So to get the immune system to calm down and think about what it's been doing and begin to behave more normally. That takes a minute. And also it's not just the immune system and the gut lining but as you mentioned it's rebuilding a healthy microbiome and so we're trying to get that garden flourish again and you don't you know water a plant once and everything is perfect. You got to do constant maintenance there in terms of your weeding and your and your and your watering and so it takes a while for these things to grow. I always kind of remind people just like we don't get to go to the gym once and have beautiful abs and biceps. It's something that you've got to do for a period of time to really build that tissue to really build your microbiome to get that garden flourishing again.

Diane Mueller, ND, DAOM, LAc
Yeah I use the gym analogy as well. I love that one. It's so easy to understand. So another question when it comes to probiotics increasing I. L. 10 increasing then the I. G. Four. Do you find

you find have you found studies where we need to say take the probiotics with food to increase that I. L. 10 and the I. G. G. Four. Does that make a big difference? Can you talk about that?

Cheryl Burdette, ND
Yes there's some data that came out maybe a couple of years ago and they took kiddos who had a peanut sensitivity and one group got desensitization and the other group got desensitization plus probiotics. And when you looked at those kids four years later, only 4% of the group that did desensitization could still could now tolerate the peanut. But if you were in the group that got desensitization and pro by 84% 4 years later could tolerate the peanuts. So, so I think it makes a really important point taking the foods out and to get the titles and the reactions down is probably as much about that. Or maybe even more about giving your microbiome the opportunity to flourish because it's that microbiome, it's that good healthy flora that tells our body, Hey, don't react to this food. Hey, let's be tolerant to this. And this is why we see for example kiddos that get the opportunity to breastfeed, they have less allergies and sensitivities and auto immunity because that breastfeeding really sets up the microbiome. So yes, I wouldn't just take foods out. I would work with somebody like yourself and really figure out what the best gut building protocol is to do alongside that because it'll make the work much more effective.

Diane Mueller, ND, DAOM, LAc
Perfect. I think that's a really, really good point for people because I feel like there's a lot of confusion about when to take the probiotics and how to maximize them. So That's super great and to circle back around to something you said earlier. So at one point in our conversation about 20 minutes or so ago you mentioned genetics. So I want to understand and help people understand. Is there a connection then where if people are eating foods that they're reacting to via allergies or sensitivities, is there a connection between those types of foods creating inflammatory reactions that are actually turn on disease promoting genes and turning on off health or turning off health promoting genes? Is that happening?

Cheryl Burdette, ND
Absolutely. And I think that we can look to some of the research from Alicia persona out of Harvard for some good validation of this idea. And so what he saw was that when you eat foods that you're reactive to or when your microbiome gets out of balance and you have more bad or what we call dis biotic factor in Syria, It creates this signal in the body called Sonya Lynn. And Sonya Lynn tells the gut to be leaky, it tells tight junctions as they're called to open up. And so then when the gut becomes leaky now everything floods in and it really ignites that immune system and we're off to the inflammatory races more auto immunity, more allergies, more depression, more migraines, all of these things that are driven by inflammation. But he isolated

this molecules and then that tells the wall to do this when it's been assaulted by either foods or bugs that have created an attack on the body. But then when he went on to say, was that interesting that, you know, we don't you know, we're not typically born with lupus or rheumatoid arthritis, these autoimmune conditions, they begin to express themselves somewhere along the line. And what he saw was that you had to have that leaky gut first and that created this tidal wave of inflammation into the body that caused the genetics to express themselves. And he was able to document this through that molecules. Ambulance. He saw that sonulin to tell the gut to be leaky went up first and then the onset of auto immunity. And so what he said was you had to have this trigger this environmental trigger this leaky gut trigger to turn those genes on. And again, I like to be glass half full if we can turn that molecule down and which we do by removing foods that were sensitive to and by resetting the microbiome with good healthy probiotics and good dietary choices. Then that Sonya Lynn goes down the gut gets appealed and there's less of that inflammation to cause these genes to express themselves.

Diane Mueller, ND, DAOM, LAc
Perfect and well said, I love Alicia Fasano. He's done so much for bringing so much information to the field on autoimmune disease and inflammation and foods and all these different things genetics and so so wonderful and it worked. So we have just a little bit of time left. So I want to just kind of open ended questions. Ask you what do you feel like is important in this conversation that we haven't talked about yet.

Cheryl Burdette, ND
I think that if we look at people who have the most success in terms of getting well in terms of turning their health around that were hard pressed to find an example of someone who really succeeds and thrives there without significant dietary change. And so changing the diet, decreasing inflammation from the diet is really foundational. And while I'm a huge proponent and user and believer in terms of nutraceuticals and even pharmaceuticals where appropriate if we want a foundation of wellness and we need to adopt the least inflammatory diet possible. And so really there's a lot of science in there and there's a lot of mechanism of action but I will back it up and say even moving from a processed diet to a whole foods diet shows improvements in terms of depression and anxiety and so really being mindful about your diet and even without a test, really thinking about getting more vegetables and fruits and really making those changes because they are well supported in the research then if you need to take it to the next level from there utilizing some of these testing so that you can individualize to what's going on in your body, can really empower you to make some change and I think of gut based approaches as being as strong as an anti inflammatory as something like a predniSONE but not having a side effect profile to them.

Diane Mueller, ND, DAOM, LAc
I like that analogy too. And I want to make sure we have a moment to talk a little bit about precision point diagnostics and what you guys are doing over there because a lot of these markers that we're talking about in this conversation you guys are offering on your test and it's super unique compared to a lot of the other food tests out there. So can you tell us a little bit about the testing that you guys are offering over there?

Cheryl Burdette, ND
Yeah. And so like I mentioned the lab was birthed out of our clinical practice and this was another area. I was like ah these tests are helpful and they're getting there but they're not there. So there's something missing. It's not it's not honing in as much as I would like it to. And then, you know, there was this strict division between kind of allergies and sensitivities. I was like, well that's not right either because people could have all of these. And so we really look to try to me make this as simple as possible and put the multiple ways that the body can react to foods all in one test the allergies. The sensitivities are you tolerant is their compliment. That's igniting things further. And so really rather than having to do test, you know, one test over here and a skin prick over here and a blood draw over there. Just just which foods am I reacting to. But when you have all that data then there can be then all that can be confusing to sort through too. So then we say you know what based on all of this, here are the things you eat and here are the things you don't eat. So some really clear action steps after we've taken that deep dive into the science and which foods are most inflammatory for your body. So yeah, again, birthed out of that clinical space of saying these are good, but I need a little bit more to really get to the heart of what's going on in my in my patients.

Diane Mueller, ND, DAOM, LAc
Perfect, Perfect. And then so you guys you can get accounts for all use clinicians. You can get accounts by going to precision is a precision point diagnostics. What's the website.

Cheryl Burdette, ND
Yep, precisionpointdiagnostics.com. Exactly.

Diane Mueller, ND, DAOM, LAc
Perfect. So we're gonna put that in Dr. Burdette's speaker profile. So you guys will have that there and then this is only available for clinicians, correct?

Cheryl Burdette, ND
Correct. So if you need help finding a clinician who does this style testing, then reach out to us and we'll put you in touch with somebody in your area. And of course if they're if they're working with you then then you're utilizing this testing as well. So yes. Thank you for that.

Diane Mueller, ND, DAOM, LAc
Absolutely. Absolutely, yeah. So if you guys need help with that and you're more patient focus then you can reach out to them over at precision point. I also work with them in my medical clinic and I obviously do to and yours so you guys got lots of resource. Anything else you want to leave everybody with any final thought.

Cheryl Burdette, ND
Yes. That ultimately doing this test is not to take foods away, but to pull more foods into the diet. And while it seems hard at first, that's just the learning curve, you'll get back to where it becomes routine and easy. You know exactly what you're pulling off the shelves when you go to the grocery store and you just and you and it's a way to just feel better.

Diane Mueller, ND, DAOM, LAc
And the last thing I will say is that just to remember everybody when you lower your inflammation like you do with these mechanisms we're talking about today. You change you improve your neurotransmitter function when you improve your neurotransmitter health, you improve your mental health. So tying that all together for everybody, Thank you so much for your time today. Dr. Burdette really great seeing you and spending time with you.

Cheryl Burdette, ND
Likewise. Thanks for doing this for people so they can find out more about how to just get back on track.

Diane Mueller, ND, DAOM, LAc
Take care.