Beyond Bloodwork: Functional Medicine Tests That Uncover Hidden Lyme Triggers Transcript

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Introduction to Cheryl Burdette and Precision Point Diagnostics

Hi everyone. My name is Doctor Richard Horowitz and I am the co-host of the Doctor Talk Healing Lyme Summit 2.0. It is my great pleasure today to introduce you to Doctor Cheryl Burdette.

Cheryl is a natural path doctor who leads Precision Points Diagnostics in Georgia. We have known each other for a very long time. I don't know if it's 20, 25 years, but Cheryl and I go back.

We served on the Xamarin board. And we both have a real passion for functional medicine and getting to the root causes of why people are ill. So today we are going to discuss functional medicine testing in chronic Lyme and why it's so important.

So Cheryl, thank you so much for joining us today. My pleasure. Thank you for having me. Yeah, sure. I'll tell people a little bit about yourself and why you became a natural path, what you're doing these days in your lab.

Yeah, absolutely. So way back in the history of time, when I was still an undergraduate and, looking at psychology and pre-med, dual major, came to a point where I thought surely these two things intersect somehow.

And so at that point, there wasn't really online. I ran to the Peterson's Guides, which were where you could look up graduate schools, whatnot. And I found this thing called naturopathic medicine, which I didn't even know what that was.

But it looked to be an intersection of how the mind and the body work together. And so I thought, that's what I'm looking for. So I went to not knowing what I was doing, hopeful that I could maybe save the world with some vitamin C or botanicals or something of that nature, and then getting into it.

Then did my residency at cancer treatment centers and at cancer treatment centers. What I realized was there was a host of helpful, helpful information, but also a lot of disinformation.

And so I found myself in a position of often getting people off certain therapies, or even as the naturopathic resident on staff, talking to people about why they should be doing surgery, radiation, chemo, therapeutics.

Why Functional Medicine Testing Matters

They would come to me looking for maybe an out or, something else they could do, like a parasite cleanse or. And so I found quickly that it was my job to help people understand the evidence behind the medicine, and really found a desire to help, to rule things in and rule things out.

So I continued on my path in terms of clinical practice. Moved to Atlanta, Georgia, was lucky to be able to work at a large integrative clinic, seeing lots of patients, and in that space thought, you know what?

We still need more diagnostics, because I could go to the literature and I could find these markers. And example at the time was oxidized LDL, which is a charged form of the bad cholesterol, LDL makes it more sticky.

It has an increased risk of cardiovascular disease over just cholesterol. I could read thousands of articles. You could modulate it with diet change and nutrients.

And then I wanted to go order it and it wasn't available. And so I thought, well, I should start a lab and we should bring to life or bring up to a commercial availability some of these markers that are so well developed in the

literature, but don't end up actually being available to our patients, so that we could move in a direction to guide about evidence based approach what's really going on in that person, and just as much as ruling things and ruling things out so we know what direction to move somebody in.

Right? No. That's great. And I agree with you. You know, when I went to medical school and became a board certified internist, I didn't even know what functional medicine was.

And it was the same thing. It was like, well, inflammation often seems to be, you know, at the basis of all chronic disease. But when you go to the literature and you go to, you know, quest lab core, it's like, well, you can do a set rate.

You know, you could do a CRP, but if you really wanted some of the inflammatory markers, like, oxidative stress markers with high so protein or lipid peroxides or eight hydroxy guanine or, protein carbons, you couldn't get it right.

There was no way to know. And that's exactly what you did. You opened up Precision Point Diagnostics and you offer those type of tests. So so let's talk a little bit about the testing because I get your newsletter regularly.

And I think it's great the stuff that you're doing. So in our chronic Lyme population, I do see a lot of leaky gut. I do see a lot of mast cell. I do see a lot of food sensitivities.

Tell people a little bit about Y testing for food allergies and sensitivities is so important, in this population of patients. Yeah, absolutely. So, you probably see some of the sickest patients out there and who also have some of the greatest range of recovery.

And when you see them, and you're taking them through the diagnostic work and you're getting to know them to the point where, you're where you're helping them understand there is a diagnosis of Lyme.

Food Sensitivities, Leaky Gut, and Lyme Inflammation

You're not thinking, well, maybe it's the strawberries or the spinach or, you know, the chicken that you're eating. That's the absolute root of what's going on.

But it contributes. And Lyme, for example, is so inflammatory that we look for these other routes to help to calm down the inflammation in one system as we're getting the infectious disease under control.

So some of those things, I always think of it as one as everyone's a pie and there are different pieces of part of that pie that apply to them more. And some people will have more gut based inflammation driven by foods.

Some people might have more toxic exposure that causes more oxidative stress. But at that moment in time when they're fighting an infection, they need all of their reserves.

So if we can identify these other pieces of the pie that are holding them down, then we have an opportunity to help reduce the inflammation, to allow the infection to clear more quickly.

And it turns out eating is something that most of us do multiple times a day. So if we can figure out a food that we're eating that creates inflammation, or we can take it out of the diet, as we do that, we've lowered inflammation that allows the immune system a little bit of a stepping stone to to just kind of help to move it a little bit ahead.

So we can get a hold of these infections that have come over us right now. It's a great point. And when I test my patients for leaky gut, I mean, we find the vast majority of all of our patients at this point have some food sensitivities.

I mean, my best example for myself is I had allergic asthma, and rhinitis, and I was sneezing and dripping all the time as a kid. I would take antihistamines, I would take asthma sprays.

In fact, when I was growing up in the 1960s, they didn't have the asthma sprays they used to use. These ones that would make my heart go at 130 beats per minute, keeping me up at night. Right?

I mean, but no one told me, hey, Rich, you've got a dairy sensitivity. And the reason you're sneezing and you're so congested and your asthma is bad is you've got a dairy sensitivity.

It wasn't even taught to me in med school that there were these other type of allergens, not immediate hypersensitivity with anaphylaxis, but these delayed hypersensitivity.

Now you do an 88, dietary antigen panel. So what are the ones you find to the most common reactions that people get? And what do you find when people get off these.

Like how does it change the inflammatory response. Yeah, absolutely. So big proponent of dietary change and looking for foods that are inflammatory. And so many people can even do elimination diets where they'll take out just presumptively things like gluten or dairy, because those tend to be two of our most inflammatory foods.

We can add things to the list in terms of peanuts or shellfish, oranges, corn and soy. It starts to stack up pretty quickly. So for a lot of us, rather than no.

Okay. In general, these are things people react to. We'd like to know what we specifically react to so we can create a diet that is at least inflammatory as possible.

So one of the things that you'll often talk about is how Lyme is so inflammatory. It creates these, interleukin something called IL six for example, that can that can go up because of Lyme and it keeps people from sleeping at night.

Well, if you don't sleep you don't heal your immune system is not working. Turns out gut based permeability can also increase IL six. And foods that we eat that we're sensitive to can cause that gut based permeability.

So again, if we want to help to lower that inflammatory load, we could do that with something like prednisone. But that would have a decent amount of side effects.

So an alternative would be to think about what where else is inflammation coming from. Foods are often a culprit. And so being able to figure out what we are individually sensitive to allows us to lower that inflammatory load so the body can get better.

When I'm thinking about infections or mold, I'm thinking, how can I build this person's immune system? And and yes, we think about in the blood a white blood cell count.

But turns out 85% of our immune system, some people say 90. I could probably edge it up a little more, because what happens in the gut influences the systemic immune system as well.

And so if we can use the gut as a way to improve our immune system, then we've found another way to conquer inflammation that's pretty minimal in terms of side effect.

It can be hard, but pretty minimal in terms of, in absolute, secondary harm to the body. Right. And, you know, and what's interesting about leaky gut, because I'm in the process of writing a third science book, I started going through the medical literature to look at these different chronic diseases and see how much leaky gut actually played a role.

And I was surprised when I looked at Alzheimer's. It shows up in the literature when I looked at Add, ADHD, it showed up in the literature. When I looked at autism, it showed up a lot.

It's like, hold on here again, this is not standard stuff we're taught in medical school. So if these if people do, for example, you're 88 dietary antigen and they get these foods, you put them on a rotation diet.

You tell them to avoid these foods. Right. But you also do an intestinal barrier assessment to see how bad the leaky gut is. Right. So talk a little bit about why we need it.

And mast cell markers. And here's to me talk a little talk a little bit about this. Yeah, absolutely. So just like you said, there's this huge association in the literature where when the gut becomes leaky and various pathologies and some of the major things we're dealing with dementia, cardiovascular disease, even some association with certain cancers.

And so, while eating foods is one way we become permeable, it's not the only way. And it's not they're not direct markers of leaky gut. So this was another time, where years ago, I said, well, there's all this data in this literature, but where are the markers so that we can track it?

Because, as you know, when we work with patients and we get them on various interventions, the first question is, how long do I have to do this? And so if we're trying to treat something like leaky got when when I got started, what would be said was that's not real.

There are no biomarkers that identify it. Therefore it can't be an actual thing. Well, lo and behold, we began to realize Alessio Fasano, who's now at Harvard, popularized, some of this formula in particular, and he found that there was a biomarker and it told what are called tight junctions, which I think of kind of like Lincoln Logs, the spots where they're held together.

The Zombieland tells those to open up. It governs gut based permeability. So now we've identified the biomarker. So what we knew clinically was going on.

Now we have something we can measure. We can track. And this gives us a whole new insight because it means now we can decide, okay, what are our therapies that we're going to do.

This helps us see how long patients need to be on them. And when that gut is healed. But that marker, Zombieland is fascinating because like I said, it's one way that gut based permeability occurs.

It tells type junctions to open.

Zonulin, Intestinal Permeability, and Mast Cell Markers

And when you go to the literature, you see things that talk about, for example, Zombieland going up before the onset of various autoimmune conditions, analysts CEO Fasano goes on to talk about, if we got the opportunity to track this preventatively, we would be able to see the initiating event.

It's not your genetics. It's not that your your mom or your dad. It's that there's an environmental influence over those genetics. And when the gut becomes more leaky or permeable, this creates inflammation kind of washing over those genetics to cause that pathology to express.

And so he's, you know, he's he kind of speaks a functional medicine speak in terms of saying, hey, you're not just genetics. It's these environmental factors.

So things that are happening to the gut and this happens before you get the condition. So, he begins to build this association between things like celiac and zon Ulin or autoimmunity and ZoneAlarm, even brain fog.

So there's a subset of brain fog post-Covid that when they began to look at the literature, they found, this has an association with ZoneAlarm. So in the gut it went up post Covid.

We absorbed some of that. And then it acts off the blood brain barrier as well, making the blood brain barrier leaky. And so now more leaking into the brain, causing a certain subset of brain fog that occurs post Covid.

So really fascinating to think about. But I always talk to patients about it's kind of like, a key in the whole the

Zombieland opens up the gut. It allows things to flood in.

And this is a way we become more inflamed. And you see it associated with these conditions in the literature. Right. And the other thing is, at least in our patients that I've seen, part of the thing that drives the leaky gut is Candida.

When I was a kid, I took antibiotics all the time. My mother used to yell to my stepfather, who was a surgeon, Harris, give him an antibiotic. But nobody ever said, take some probiotics, eat some yogurt to put the good bacteria.

So even at this age, at my age, if I'm not careful with carbs, I know when the candida is flaring up and I feel tired from it. I mean, I can tell and about 10% of our Lyme patients, you know, after I finished capstone therapy, if they ever tell me like they weren't maybe a strict as I want them to be little white tongue, maybe some vaginal discharge, some bloating with carbs.

It's like you may have Candida here, take some fluconazole apart from like stat and clear out. How do you feel at about 10% will come back and go oh my God.

My fatigue, my brain fog, my pain, it's gone. It's like you help the line, but it was the candida and the leaky gut that was still driving some of the inflammation.

Right. So and Marcelle, I mean, my God, we're seeing Marcelle reactions in probably half of the patients here. So can you talk a little bit about the mast cell markers and, you know, Dio and like why we need to pay attention to this because it's it's another you you mentioned it earlier and I think it bears repeating in my model in the message model there are six overlapping causes of inflammation.

We have infections. We have environmental toxins. We have microbiome issues. Too much prevalent, not enough. At Kermanshah we have leaky gut, mast cell, food sensitivities, sleep disorders, vitamin mineral deficiencies.

Those are the six big ones. So we're taking one small aspect, but it's a really important aspect because we're finding it in so many. So since people do have mast cell from Lyme, from Bart, from mold, tell us a little bit about the markers for it.

And and by the way, how do you treat it? I'm curious as a natural path, how are you treating the leaky gut? Because these endotoxins, right, the LPs and endotoxins are getting in there driving inflammation.

What do you like to do to bind this and to heal the gut? Yeah. So when you first find a marker like Zombieland, it's so exciting. And you want to think maybe everything's governed by that.

That is the thing that causes leaky gut. But it turns out it's not the only way we get there. Like you said, lipopolysaccharide can cause it, or even histamine can begin to wear down the gut lining.

It can do that to such an extent that it we also re, so, holes in the gut lining. It's not Zombieland mediated, but atrophy is still a type of permeability.

And histamine can be responsible for that. It's so directly responsible that the body is wise and what the body does is it creates an enzyme right in the gut lining called diamine oxidase.

And this is there to degrade histamine that is either in foods that we eat or that occurs secondary to foods that we eat, that we're sensitive to, or even histamine from various bugs, because they'll do that as a way to erode the gut lining so they can get into the system so they can get into us, the host, so that they can live longer.

So diamine oxidase is so important. It gets created right there at the gut lining. We also measure that as well because it tells us is your gut lining robust.

It's a marker of mucosal maturation. A good thick gut lining makes lots of this enzyme diamine oxidase to degrade that histamine with other brush border enzymes, because we want to do everything we can to decrease inflammation.

Il6 is one way to create inflammation, but histamine is another. And so we're back to that gut lining. Either it can be a wall, building like a, like a fortress, like our fort, building protection between the outside world and the inside world.

Or in addition to that, it creates these enzymes right there in the lining that begin to degrade these irritants that might come in. And so diamine oxidase is one thing that gets created in the gut that degrades histamine.

And so we've got kind of a couple of choices. Either you can make too much histamine or you can have difficulty degrading histamine. And you can make too much histamine because those mast cells get turned on, they get turned on by mold or Covid or Lyme or genetically.

Maybe you have an upregulation and it's a weak spot, but you can also have problems in terms of breaking down the histamine. And so the major way we get rid of histamine is diamine oxidase.

There are alternative pathways we can also methylated. And we can also see delayed it. But but our biggest way that we get rid of it, especially in the gut, is this diamine oxidase.

So the body makes it, but when we have a more degraded lining, we don't make as much. And so fortunately, we can give it. And the form of a supplement as well.

And so having it as a therapy has been quite useful. But you mentioned so what are the treatments for leaky gut that, that I like and so so when we start to build that list, it can get quite extensive various probiotics, lots of glutamine.

Like I mentioned, things to control histamine or what about the Zombieland or the lipopolysaccharide? So when we have some markers of leaky gut, we can begin to understand maybe which things are most important for that patient.

And this is really the beauty of it, is when we are trying to figure out what's behind something in each individual, that means we've got to consider all these points, like you said.

And if we were just to say, well, we know it could be these 6 or 7 things or these 16 things might be at play. And so we're just going to do something for every single one.

It becomes overwhelming to the patient and not realistic. So if we can have some markers of leaky gut, it can guide us in terms of therapies that are more important.

So for example, if I saw somebody with a higher onion and that was opening up their tight junctions, it turns out that immunoglobulins, actually sit in that receptor and block someone from binding.

Candida, Histamine, and Gut-Healing Strategies

Well, the other place we find immunoglobulins are, for example, in breast milk, and breast milk is one of the go to leaky gut strategies because all babies come onto this planet with a leaky gut.

So I find it fascinating to look at breast milk, think about what's in there, and then think about what we can extrapolate from that. Well, it's very high in immunoglobulins.

So let's mimic Mother Nature's strategy here. There's immunoglobulins blocks on your line. But they also improve the immune system. They're they wall off bad bacteria.

They influence our microbiome. However if I saw lots of, histamine upregulation and low diamine oxidase, that major enzyme in the gut that breaks down histamine.

Now, I might be using Deo as part of my strategy. And if I saw, for example, those lipopolysaccharide that get shed from bacteria, now I'm probably reaching for various anti microbial, maybe things like berberine or garlic that are helpful there as well.

So it really allows us to understand that that person's type of leaky gut so we can address that more specifically. Right. And you know and you mentioned an important point with Covid that I think a lot of people are not looking at.

I published an article this year in April of 2024 and microorganisms about these three patients now in long term remission from Daptone. And I mentioned that there about Covid because a lot of everyone's coming down with it these days.

We, we find that now in the literature, the Covid virus or pieces of the virus are in the intestine and it's actually causing inflammatory rebalance. People, there are people who've never had inflammatory bowel before that are now starting to get it after getting Covid, because the virus or pieces of the virus are in there.

So it makes things worse. I mean, you know, before before mold was around, I mean, you know, five, six, seven years ago before I really understood the importance of mold.

I've learned year by year that these factors just keep accumulating in people. And you've got to, at this point, really take a look and see what's going on with Covid.

Now Covid, you have Covid as you do because I've used things like Radiance Diagnostics and, you know, looked at Bruce Patterson's work with, CCL, five rents and I04 and, you know, the interleukins and SDC 40, the EGF, which is a Bart marker.

But Covid, you have your own Covid panels that you like to see if it's causing inflammation. Yeah, more just on the diagnostic front. But we do do some wellness panels with general markers, and I think these could be a nice place to look to to start to get an idea.

But I'm with you. I was blown away how early they started to figure out a connection with Covid and who was going to be worse. And I remember probably 2020 even seeing a study.

So, you know, I'm still early on, a little early on in our study in terms of, talking about, okay, we're we're we're almost able to predict who's going to have the worst symptoms.

We figured out, you know, some things in terms of cardiovascular disease or diabetes or obesity, in terms of risk factor, maybe ethnicity, but we can't quite completely predict.

And one of the things that they found really heightened their ability to predict who is going to be the most sick, was looking at markers of dysbiosis, us looking at things like stool testing, like our language, speaking that microbiome language.

And they talked about how if there was some dysbiosis or bacteria or yeast, like you mentioned, people tended to be more tipped in an inflammatory direction with their immune system.

A branch called THC 17 that, will make lots of cytokines, lots of inflammation. Well, we know one of the problems in Covid was the cytokine storm. And so if your immune system was already leaning that direction, because of things just biotic in the gut, then that onset of Covid creating more inflammation really pushed you in that direction.

And these were some of the people that would get worse. So I found that fascinating to think, wow, we're right back to our kind of some of our fundamentals in terms of when we think, how do you lower inflammation in the body?

Of course, we want to get rid of infections, but we also think about that gut based piece in terms of one of our major ways of doing it. So I think some of those panels that you mentioned are, yes, are very helpful in terms of our long Covid patient.

We don't really have something established like that. We do have some of the basic markers and expanded panels for some of the basic markers. And so when we start to see some patterns there, maybe for example, higher ferritin and low lymphocytes like that was weird, right?

Because 101 of lab sciences, we were always taught if a virus lymphocytes go up or here's this condition where now the exact opposite the lymphocytes are down.

Neutrophils are up, which was supposed to tell us it was bacterial most of the time. But yet this is a virus doing that. So we already saw this kind of different skew in the innate immune system.

So for example just some of our basic markers, if we see an elevation in ferritin, it's suppresses lymphocytes. That tells us there's chronic inflammation.

And that can lead us to go on and do some of those cytokine profiles that you mentioned, or follow some of that work from Patterson. So I do, like to look at that, that basic lab work as well, to say, okay, which test is going to be most appropriate for you?

Because as you know, this is also one of the issues, if we want to know everything that's going on on that person and every process that affects their condition, does that mean we need to order every test that's out there and it gets daunting and scary not being scary to clinicians and patients as well.

And so using some basic markers to govern those next steps I think is important too, because the testing should be individualized and mainly driven by the history.

It's a little it's it's sometimes ironic I'm in this space because I'd be the first to tell you that 95% of your information, you're always going to get from a history, and the lab testing is just to, clarify from their knowledge.

Yes, that that is absolutely true. And like, I've had Lyme patients where we've simply done things like a set rate where I might have it's unusual. It goes that high bad.

One patient, horrible headache. Said rate of 80 to 90. We treated it with absolutely no went down to like 15 or 20. I mean, you could clearly see the lower inflammation now in the functional medicine space.

You and I both know we've talked about this, whether it's Lyme but busy apart it's all inflammation. So talk a little bit about the markers of oxidative stress that you do.

Because these are not standard markers that you'll get like lipid peroxides and eight hydroxy guanine. And why these are important because if you know that the oxidative stress is part of the inflammatory process, it helps to tell you apart from the symptoms, which you said it's always clinical, but it does give you some important information that, hey, you're making a difference.

Covid, Dysbiosis, and Inflammatory Lab Patterns

You're you're blocking NF kappa B efficiently with an acetylcysteine and alpha lipoic acid and glutathione on. And in fact, you measure glutathione, don't you.

Yeah. Yeah. So let's talk about this a little bit. Yeah. So I, I grapple with these things in my head. So for example we know that toxicity is affecting our patient population.

It will make most people were some some people tend to be a little more resilient. But but in general when we see escalating autoimmunity, escalating allergies, that's pretty clear in the literature.

They're pointing to environmental, issues in terms of this piece. And so that I think, you know, things like, oh my gosh, a newborn baby, even, as much as 708 hundred chemicals in, and, umbilical cord.

So even before we get here. So then, okay, can we measure every chemical out there and then the exposure and then what's going on. And that's difficult.

Well, it's impossible to measure every single chemical. Now, there are some good profiles out there that, that, that make a good swath in terms of, you know what, what's the majority of what's out there.

But what's the question that we're asking? And we know, for example, we could have two people, you know, partner sitting in the same moldy house and one have symptoms and one does not.

Yet the exposure was the same. So it's not always exposure. It's what our body can handle. And that's true in terms of toxins from mold, toxins from the environment, toxins from hormone breakdown products or cytokines or whatnot.

So if that's the case, when do we know if it's having a functional impact? And so the way to decide if our toxic exposure is creating an impact in our system is to say, well, as your as your pool of anti oxidants depleted, because if it is, you are having too much exposure for your system.

For some of us that could be, you know, this much mercury. For some of us that could be a giant pile of mercury. Where's that functional impact. So glutathione is the major intracellular antioxidant.

Whether or not we're talking the brain or the liver or the lung or the kidney, it's one of the things that protects our mitochondria, which is where we make energy.

And so looking at glutathione levels can tell us if we've had too much exposure. So we do that, we do it in a red blood cell. The reason for that is that that more mimics the tissue, because a red blood cell takes 120 days to live its life cycle.

If we just measure what's in the blood, that really just gives you yesterday's levels. Maybe 72 hours. But that's why we do it that way. And there's so much data with glutathione.

If glutathione on his left, you are more likely to have issues in terms of detoxification. If glutathione is low, you're more likely to have conditions like Parkinson's or Huntington's, but even depression and anxiety, because again, it's the major intercellular antioxidant for the brain.

It protects the brain. It's one of the major ways we detox. It's one of the major things that protects our neurologic system, not just central, but peripheral as well in terms of neuropathy.

So so when it gets depleted, that's when we have symptoms, regardless of which chemical it was or which toxin it was, it tells us do we have a functional impact.

And so I can now do therapies. And if it's going up and the patient's getting better, then great. I don't necessarily have to name the chemical or the bug.

Now when I hit a wall. And that's not happening anymore, now I need to know what's going on. And so there are a lot of good profiles out there that can help you differentiate.

Next steps. So I wanted to think about some of these markers that we could use initially to help guide, kind of where do we need to start our cleanup.

What which piece of the pie is most applying to you? Is it leaky gut? Is it oxidative stress and now work in those areas? Okay. Now when we hit a wall.

Now what what are our next steps in terms of defining why you're not responding like I think you should? So when you say lead, yes. And of course clue to fire.

And I mean a, you know, you and I know we spoke about this during your doctor training earlier. I was the first doctor to actually publish on glutathione for Covid back in April 2020. And it was by accident.

It was simply because these Berbizier patients used to come in with shortness of breath. I would give them a shot of glutathione for Hertz. They'd say, well, my shortness of breath is better.

Covid 19 hit. They said, wow, I'm so short of breath. They're getting Covid pneumonia. I look it up in the literature and it turns out there's 140 times more glutathione in the lung tissue than any place else in the body.

And it's like, oh my God, these people who used up their glutathione for detoxing environmental chemicals or from oxidative stress, they couldn't protect their lungs from Covid.

And one of the er doctors in New York City who contacted me early on in the pandemic, I knew from before, he said, listen, I can't work anymore as a doc.

I had Covid, pneumonia, I can't breathe. And I said, I want you to try something for two weeks. I want you to take glutathione 2000mg three times per day and AC 1200 twice a day. Alpha lipoic acid.

That's for the blocking NF kappa B one of the major pathways that drives inflammation. I want you to stimulate another pathway called Nrf2 that lowers inflammation.

Take 500 of curcumin twice a day. Take broccoli seed extract. 100 twice a day. Lo and behold, 14 days later, he sends me a repeat chest X-ray and he says, I can't believe it.

My chest X-ray is cleared and I can breathe. I'm going back to work now. All we did was replaces go to iron and stop the inflammation. So you're making some really great points here.

Oxidative Stress and Glutathione Testing

And also about the RBC glutathione, because I've checked serum glutathione I find them low. It goes down as you age. But just like we need to do RBC mineral levels because most of the magnesium copper zinc is inside the cells.

That's a great point that it precision diagnostics. You're also doing RBC glutathione. And I'm not sure the regular labs run that. But that's it's a great, you know, clue for people to check like how that's working.

Because you're right. You were exposed to thousands of the article that came out a week or two ago. You go to the supermarket, all the packaging and food packaging, just like hundreds of cancer causing chemicals for breast cancer, that's in the foods that everyone's eating every day.

So it's like, no wonder everyone's coming down with cancer. We're not addressing all the toxins and we don't have the pathways. So yeah, it's it's it's a great point.

So when you're seeing these people, you're doing this leaky gut profile and, and and checking the 88 food profile and lipid peroxides. Right. And and so you doing all of this on a first step when you're evaluating from a functional medicine standpoint, these sick patients. Yes.

Because as we talk about you got to peel away those layers of the onion. And also from that paper that you published about glutathione. And I learned that it decreases viral replication as well.

So at the same time you're protecting the lungs. You're actually treating the root cause. Fascinating. And you probably do this too. We'll have people even nebulizer glutathione, to get right there to the lung tissue.

So really powerful therapy. And I love this about our medicine that it has this, epigenetic kind of activity to it. So at the same time, you're protecting the tissue, you're also helping the immune system.

And those cytokine storms that we were talking about, Bluetooth II on cuts off communication between those cytokines. So they can't continue to whip themselves up as much.

And in fact, was that I think yeah, it was I think it was I think you cited in your paper another maybe another paper that talked about the depletion of glutathione alone, being concurrent with, well, not compatible with live people that were dying from Covid.

It was that drop off and glutathione, that was really precipitating that because those cytokines continuing to move in that direction. So when people come to see us, that there again, there can be it's multifactorial very rarely what people often the way we're taught to think in our and standard of care is that it's going to be, a name, a diagnosis.

It's going to be one thing. We're going to treat that and that's going to get better. And so that's what people are craving. They're craving that label. What's that thing?

And now what's that, what's that? Hey, that's my X. And then what's my y that I'm going to do for that. And unfortunately it just isn't that way. We are wonderfully complicated.

And so there are all these reasons that could occur, like you said, is an inflammation that's coming from the gut. Which infection is it? Is it mold? Is it oxidative stress?

Is it mental emotional stress or toxicity. And so tried to develop profiles that would help us have kind of a first brush at some of that. Are you more toxic.

Are you more of a gut patient. Where's your inflammation coming from? Is it more from a food or a bug. And so to to give us a launching point to some of those next steps so that, like you say, we can pull away those layers of an onion, but in a way that makes sense for that patient.

Yeah. And you're right about this multifactorial. I mean, I think it's one of really the hallmark points that everyone needs to walk away with is, I used to make the I have the analogy with people that a person goes into a doctor's office with 16 nails in their foot and says to the doctor, I have foot pain.

And the doctor pulls out one nail and says, come back next month to tell me how you're feeling. And in our world, you know the 16 point map. I do find actually almost all 16 points in most people.

But as you mentioned earlier, it's not all of the nails that have the same effect. So in my world it's Lyme. It's the BS. Yeah. And it's Bartonella at the top of the list.

There are other infections now for viruses Covid and long long hauler is playing a role. I'm seeing Epstein-Barr reactivation. I'm seeing Healy six reactivation.

And as you mentioned, low glutathione viruses need to lower glutathione to replicate. I when I did the research it wasn't just Covid, it's the flu, it's RSV, it's dengue fever, it's HIV.

It's in a lot of these viruses. So it's in part why I recommend to my patients take NAC alpha lipoic acid. Glutathione on the NAC helps your body to make glutathione.

The alpha lipoic acid helps you to regenerate glutathione. Right. It's very it's water soluble. It's fat soluble, gets up into the brain for inflammation and in fact, brain health and oxidative stress.

Talk to me a little bit about that because that's one of your right. We've talked about this before with Alzheimer's Parkinson's. Why is this so important to control this.

Yeah. So on that same profile with glutathione, there's some other markers of oxidative stress. And so first off, yes, when some so let's say I meet with a patient and they've been suffering from depression for, 20 years.

And they've been on various medications that change serotonin or even other neurotransmitters, epinephrine or epinephrine. And maybe they've even seen people in the functional medicine space that add an amino acid.

So it should also help with those neurotransmitters. And yet no matter how much somebody tried to modulate their neurotransmitter with no matter what intervention, it's just isn't getting them there.

Well, it turns out that is not the only reason that we experience depression. That is one reason. But but low neurotransmitters, are not the only reason.

So we also know that oxidative stress is implicated in the literature in terms of depression. And oxidative stress occurs in a low blood Italian environment.

So when we look up clinical trials with glutathione and depression, you see positive outcomes with that. And again it's so nice because what are you doing.

The glutathione on is improving the health of the tissue. It's helping the central nervous system to work better. I often think about it like like a garden.

And so in terms of the seed, that's your neurotransmitter, that's your serotonin. You need the seed. But if I throw that seed on a garden, that our garden or dirt that I haven't aerated or fertilized or watered, it's going to have a hard time taking off.

So the glutathione on it is that fertilizer in the soil, the fertilizer for the brain that helps the tissue to be healthier. And so in an environment where we reduce oxidative stress, where we reduce free radicals, those neurotransmitters can now work better.

So now we have something that's synergistic, that has very minimal, risk in terms of side effects. So sometimes we can worry about too much serotonin.

And so this would be a different way to surround that serotonin even protecting receptors. And so it gives us another avenue to help somebody. But and not just depression neurologic conditions too like like cognitive decline or dementia.

This will occur in a low retired environment. It turns out as glutathione drops, which it does as we age, we produce less of other neurotransmitters, things like dopamine or acetylcholine that help us with focus and concentration.

And so if we want that brain to keep making those neurotransmitters that help us think and help us stay happy and even help us sleep, then we've got to fertilize the terrain.

And glutathione alone is that major intracellular antioxidant that helps us to do that. So so the the marker specifically you're looking at for brain and oxidative health is reduced.

Go to tion f2 ISO protein eight hydroxy guanine. Those are the main markers you're using for like brain and oxidative stress. And that they're, they're, they're useful because for example, we've all read all these studies that talk about a mega threes and how a mega three should help us to think better and reduce depression.

And and so then we'll get people on good levels of omega threes. And maybe they're not moving like we expect they should. Again what's the environment that that omega three fatty acid is going into.

And so one of those markers on their F to I stain when it is high. It means that we are not converting DHA to neuro prostate. We don't do that as well when there's more oxidative stress.

So after I said prostate tells us our fats aren't working like they should, our fats are inflamed, or oxidized and the brain is again over 80% fat. So it gives us this clue, maybe even those good omega three days are getting oxidized.

And so in an environment with high up to ice, a protein where we're, we're trying to change the terrain, we're giving that omega three, but it's not getting incorporate it into the central nervous system where we'd want it to be not getting converted to that neuro prostate, not being made into those highly anti-inflammatory modulators like LPs, toxins and resolvers.

Brain Health, Cortisol, and Stress Response

It blocks its ability to work as it should. The second place we see a lot of research with up to the protein is in, the cardiology literature as well, because it tells us that fats are getting oxidized.

And if I were to take a little biopsy of a plaque, what I generally find in that plaque is some oxidized LDL, but also F2I suppressed stain. It's this it's this angry fat.

It's this oxidized fat that's accepted this charge. And so, so it tells us that, that the environment that our fats are in are not healthy. And so now that LDL, that we, I still, you know, say, okay, HDL healthy cholesterol, LDL lousy cholesterol is the mnemonic there, but it's not really the lousy one.

It's once it gets charged by a free radical that it becomes even more problematic. And so when after the protein is high, that's an environment that damages your lipids, that causes something that's even more inflammatory, more sticky.

So it tells us about the environment that that we're in. Also, that last marker you mentioned, FDG, it's a marker that goes up when there's DNA damage.

And so it is associated with more cognitive decline. But the other place that has DNA, besides the nucleus of the cell is also the mitochondria of the cell.

So there's a lot of research that talks about FDG being high when there's more damage to the mitochondria. Well, that's where we make energy. And two things that have to make a lot of energy the heart and the brain.

So a lot of association with FDG and cognitive issues and cardiovascular disease as well. So again, we all know antioxidants are good for us. We know we should drink green tea and eat blueberries.

And many of our patients will come in and say, But I'm doing that. But the question is, is it enough for their system and is it enough for their system when they're battling something like Lyme that's constantly creating cytokines, it's creating more oxidative stress.

And so being able to have those measurements now tells us, okay, even though you're doing these things dietary, we need to add more compounds from broccoli.

We need to add more compounds from blueberries and green tea because it's not enough for your system. Yeah. So that that's a really important point that you made that when you're looking at these markers of oxidative stress and brain function like eight hydroxy guanine and, you know, f two ISO protein reduced go down if you still have these other sources of inflammation, you could be doing all the right things.

You know, I went to the cardiologist recently as I was getting older, just to make sure I wasn't clogging up any arteries. And if you saw what I swallow every day and I joke about it because I'm probably swallowing 70 pills in the morning, these are to block inflammation.

You know, I block NF kappa B with knock off like point acid glued. I take resveratrol, green tea, sulforaphane, curcumin to stimulate Nrf2, a little melatonin at bedtime for LRP three inflammasome I take a mercury free fish oil, I

take probiotics, I mean, I'm doing everything I can, but I went to the cardiologist, said, listen, I work out, I exercise, but I have high cholesterol and I want you to know whether any plaque, any did a Doppler ultrasound, they did a CT angio, did a study, and everything was fine.

And I don't know that it means everyone has to swallow what I'm taking every day. But the point being, I was controlling the oxidative stress. Now, I don't have chronic Lyme like other people do, but it's a great point because once you deal with the Lyme in the body and the other sources of inflammation, you should see these markers get better.

And it's not just then you know your cognition and your physical. It's going to affect your overall health, right? Your brain health, your cardiovascular health.

And these markers will be able to tell you that even if you think you're doing the right things, maybe you do need extra support and you can't that support.

You can't know that clinically. You have to look at those biochemical markers to really be able to tell. And, and the last point I want to bring up, because you brought this up in a newsletter recently, and I think it's important talk to me a little bit about cortisol and brain inflammation since we've been talking about these other things, because I do DHEA, cortisol testing all the time by saliva.

Most of my patients it's phase one to phase three. They're low. They don't have cortisol. The talk a little bit about how this is also impacting inflammation and why we need to do this testing.

Yeah. So this is another place where I grapple with myself and work to check my bias because, do we really need a test to tell us that our patients are under more stress?

Can I ask questions? And does your condition get worse when you're more stressed? Whether or not that is your symptoms from Lyme, or your insomnia or your fatigue?

If it gets worse under stress, then I probably can figure out from the history that stress is playing a role. So, so so how important is it to have a test that would define that?

Also, we know that stress does make so many things worse, can't we? Probably logic assume that there is some relationship to stress and what's going on in terms of pathology in one system?

And yes, absolutely. We get that from a history. And there are absolutely things that we should do to treat right off the bat. We should work with people in terms of relaxation exercises and meditation.

Maybe finding apps that that work for them, maybe using things like heart math and, and all of these should be deployed because we know that it is a major path of inflammation.

Just stress itself can cause those same mast cells to be granular that we talked about before, epinephrine and norepinephrine, those stress hormones, they bind right there and cause it to burst open and release histamine.

So and that's one example of the many things that stress can do in the system. So so then how much do we need a test to tell us. Well that newsletter that you are speaking of was talking about stress hormones and cortisol and how if we don't have the right level, it makes the brain more fragile in the face of stress.

So normally we would think, yeah, stress and your stress hormone went up and you're producing more cortisol and that's going to make you more anxious.

And that is going to create more of an inflammatory response in the body. And that's true. That creates pathology. But the interesting thing about it, that newsletter talked about how also low cortisol can create inflammation as well.

And so you'd think well, you'd think at least the benefit of like being stressed out in high cortisol is maybe I shouldn't

have inflammation anymore. But no.

On both sides of the equation there are different mechanisms of action, but they result in inflammation. And we would do different things clinically to treat in terms of whether or not we want to lower cortisol or increase cortisol.

And so we have to have adequate levels of cortisol in fact, from the brain being more resilient to even long Covid. Some people's Covid is long Covid fatigue.

It's right there in the literature for point salivary cortisol flatlined. And and so what should happen is our cortisol peak in the morning and slightly decreased throughout the day.

So there's the pattern we should have. And we can get some beginning answers from a serum cortisol. But then seeing that pattern really helps us to understand where the adrenals are at now.

And certain conditions that are made worse when we don't handle stress. Well, I won't say all of them, because that's never true in medicine, but it's almost all of them.

And so being able to improve cortisol gives us such, an ability to help make things better. I think about how, for example, if you're flatlined, like in that study where your brain's less resilient, you're also if you get a cancer, you are more likely for that cancer to be metastatic and even to cross the blood brain barrier.

So, so understanding that that where we're at with the stress response can be a big deal in terms of treatment. Also seeing it is sometimes believing it.

So for me, I feel like I'm kind of a laid back person and I handle stress well. And and so maybe that's not the thing that I need to look at. But when we measure this in various ways, maybe through cortisol or for me it was, constant continuous glucose monitoring.

I found I eat pretty well and that was okay.

Closing Thoughts and How to Reach Precision Point Diagnostics

And then I saw this one spike in my blood sugar. I was like, well, I don't even remember. I didn't eat it, and I remember, oh, I had a, somewhat contentious conversation that I didn't feel bothered by it in my brain.

I didn't think I was feeling stressed, but my blood sugar sure showed it. And so sometimes seeing it is what we need to understand that, we are not perfect in a storm of stress.

And it is something that affects our body right down to the tissue. And if we normalize that, it can help to make so many of these conditions better. Now, it's a it's a great point.

I do it on every patient. When they first come in I do a DHEA cortisol salivary test. We use adaptogenic herbs all the time. Pantothenic acid and, you know, rhodiola and ginseng and B vitamins.

And it makes a difference. I mean, I'm look, I'm still working hard at my age. I take these type of things. I do like even the adrenal gland fillers. I don't like using a lot of hydrocortisone.

You can use it in a lion patient. Prednisone is kind of a no no unless it's an emergency. But hydrocortisone, which is bioidentical. I've had patients that it was the primary male.

They had third stage adrenal fatigue. They literally have no cortisol. I gave them that. Your immune system doesn't work. Well, if your cortisol is that low, nothing works well.

And they felt tremendously better even though they had linemen boobs. And Barts. So, you know, I think. That's the flip to where the adrenals are. Flatline, flatline I'm trying to treat those adrenals.

Give give them stuff for the adrenals. Give them stuff for the adrenals. Nothing's making them better. Wait a minute. Why wouldn't they be getting better?

Is there something that's a physical stress to the system? Maybe there's an infection. And then you look for the Lyme and then as you treat the Lyme, all of a sudden, boom, those adrenals get better because you weren't treating the cause of the stress. So.

So I think we're getting close to our time. Boy, this went fast as a conversation. You and I always do this. So let's let's just sum up so, Cheryl, you're running Precision Point Diagnostics.

We talked about functional medicine testing, about doing your an 88 food panel with IgG4, looking at zooming in on looking at, DHA levels, looking at what's going on right with these oxidative stress markers with DHEA, cortisol, and how important these are in doing these functional medicine testing, because it gives us this other way of really being scientific, of knowing exactly apart from clinical, you mentioned that it is 90 to 95% clinical, but it gives you actually the data to tell you I need more glutathione, I need more antioxidants.

My gut is still not working correctly. And in my world, when I first started treating Lyme, I didn't know about functional medicine at all. Now it has become an integrated part of everything I do, and it's really, really important.

And I, I just want to thank you for taking the time today and and explaining this. Where can people get in touch with us? They want to learn about your lab, learn about you consult.

How can they learn about you? Where would they? Yeah. So see Burdette at Precision Point diagnostics.com is my email or Precision Point diagnostics.com is the laboratory.

I'm also at Progressive Medical. That's the, the clinical space that I am and and again nobody needs every test that is out there. But the idea of the test from Precision Point are to help one figure out where you centered, what direction you need to go.

And, so, so first, find a clinician that understands working and then this direction, get a history, have someone who talks to you for more than seven minutes and then figure out your next steps from there.

And that's really where the lab testing comes in. Thank you Cheryl. That was really, really helpful. It was great speaking to you today. Look, I look forward to the doctor training we did today, which was great earlier.

I want to thank you for that opportunity. So everyone, you be listening to doctor Cheryl Burdette from Precision Point Diagnostics. I'm the co-host of Doctor Talks Healing Lyme Summit 2.0.

Thank you today for joining us. We talked today about functional meta test, medical, functional medicine testing in chronic Lyme. We'll be with you again very shortly.

And thank you for joining us today. Bye bye.