Introduction and Dr. Nafysa Parpiau2019s Background

Hey everybody it's Dr. Diane Mueller and host of Microbes and Mental Health Summit. I am so excited about our next guest Dr. Nafysa Parpia welcome Dr. Nafysa I'm so happy to have you. – Thank you Diane.

I'm so happy to be here. It's going to be an exciting summit. – Yes it's gonna be exciting summit. I'm really looking forward to this talk so let's kick it off right away. Tell us a little bit about yourself how you got into this world, you treat lot of chronic infections.

Tick borne illnesses, worked with a lot of toxins, sinuses. So how'd you get into this? Very complicated and interesting world. – Yeah so for the past decade or more than a decade now I've been treating people who have complex chronic illness that includes tick borne diseases.

Line Barton, Elevate Busia. All those co infections have high viral loads, they have parasites many chronic infections and high environmental toxin alone and how to get into this. When I graduated from Bastyr a long time ago I knew that I wanted to do more than primary care. That's what they had trained me to do like all good naturopathic schools do but I wanted more and so I was lucky or blessed enough to be invited to work into Dr. Kling Hearts Clinic in Seattle and so I shadowed him for a year and worked in the I. V. Room and and I just learned so much and from there I went to learn from Dr. Isaac Eliaz who is a very well known Integrative Oncology doctor and he invited me to come on board and lead the line and chronic illness side of his clinic when I saw what he did for people who have cancer regarding detoxification therapies.

Let me try this with people who have tick borne disease because I know it's working to change their immune system to bring about some immune regulation.

When I added in those ivy therapies done in a very particular way by Dr Elias I saw that it was easier to treat Take-born diseases. So from there I then went on to Gordon medical where where I've been at since 2016 and the whole clinic focuses on complex chronic illness.

So it's wonderful to be there. – Such a good history and amazing teachers. What a great foundation to take everything off with. It's so rich, I love it.

– Thank you. I feel very lucky for who my mentors have been. – Yeah, absolutely, absolutely. And I want to jump right into our, one of our main topics you know that we talked about talking about is sinus and the sinuses and relationship to mental health and relationship to chronic illness in general.

So let's start if you would just help us make this connection like where and why are the sinus and sinus health? How is that integrated? Why is it important relationship to mental health?

– Thank you. So I'm very excited about this topic. I find that there are not too many people thinking about it and the research is new. It's just up and coming. Right, so you think about how close the proximity, in proximity the sinuses are to the brain.

And that gives us a big clue as to what's happening. So with chronic sinus inflammation can come brain inflammation. People often think about the gut microbiome that's commonplace now in medicine and there's so much research about the gut brain access, but there's much less about the sinus brain interface.

Why Sinus Health Matters for Mental Health

So, a lot of this comes from what I've been seeing in my patients more than the research. So there is some interesting research that came up. I think it was last year, which I'll talk about as well. But what I've noticed is that

those with chronic sinusitis often have inflammation from the sinuses that can lead to symptoms of the brain. Brain fog, mental fatigue, executive functioning issues, depression, sleep problems, you treat the sinuses and often time these issues will go away.

– Yeah, it's so it's interesting, right? And I think it's so under talked about, like you said, because the membrane as we know between the sinuses and the brain are so thin.

So before I ask you the next question, I'm gonna veer off just for a second of like what in your experience do you see from just that, that thin level of the membrane.

Are you seeing that toxins or even infections because of that thin layer actually getting into the brain more easily. – So it's what I believe, I wish there is a way to test it.

There's not. But what I do test is the infections and the science is a lot of times I'm finding molds or fungus is in there and finding bacteria and and I know that bacteria create biofilms. I know the molds create mycotoxins, I know that wherever there's infections there's going to be inflammatory cytokines and those can cross the blood brain barrier. So, I believe, you know, I believe this why? Because once I treat it, once I, once I get rid of the infections, once I bring inflammation down in the sinuses, I'm seeing that their brain fog or their executive function issues or their depression that that goes away. But these patients also have a variety of infections, so including tick borne disease, mold issues, viruses, parasites, dental infections, infections, which can also affect the brain.

So they have a high environmental toxin, load and structural integrity issues and emotional triggers. So they have immune dysregulation and neural inflammation that's stuck in a loop caused by so many issues.

So it's not just the sinuses, but treating the sciences has a huge impact on their health. There's a lot of other treatment that has to be done with these patients as well, definitely intriguing their sinuses. I see changes in their cognition, even if I haven't treated anything else yet.

– let's go deeper into that. So you're saying changes in the sinuses change the, you know cognition, they changed your information? What else from like a symptom picture you really seeing as far as brain function and what's happening with this, you know, dysfunction in the sinuses.

So besides neuro inflammation and cognition, what else are you seeing in a level of brain brain? – So I'm seeing that it's definitely linked to mood changes and this is well known. So, people people with chronic sinusitis, they are dealing not only with stuffy noses and headaches, but also with brain fog or difficulty in focusing or they get depression. They have poor sleep.

And of course these symptoms implicate the brain's involvement in chronic chronic sinusitis. But what's interesting is patients with chronic sinusitis, they seek out treatment for these other things.

These other reasons more than their runny or stuffy noses, they might not even know why or that their links. So they come into the office and they say, I don't feel as smart or as sharp as I used to.

I'm forgetting things I don't feel as social, my sleep isn't as good as it used to be. In fact, I'm not getting more than three hours of sleep at night and then I go and I asked about their sinuses and very often there's an issue there.

– Do you? Are you testing people then just so people can start looking out? So say people have some of these things you're bringing up that are non sinus related, but they're coming into for some of these other symptoms. Do you ever find people that don't have sinus pain but are still worth running the test on because of their main symptoms can help with that. Yeah – Absolutely I do.

Some of them even say well they're surprised when the when the test comes back and maybe there's mold or maybe there's a staph infection. I'm seeing a lot of clubs C.

L. N. L. Lately more than ever before in the sinuses. So they're surprised then when I treated they say oh I didn't I

didn't realize I was having issues breathing and my executive function is that is better.

– Yes. Yeah I think so many times there's so much inflammation going on here and people developed such a I get they just cope with it and it just becomes such a normal part of their life that sometimes they might even have symptoms their right and their sinuses that might be inflamed and they don't even think of the inflammation actually occurring there. – Forget but so there is a study them last year where those with chronic science infections were given M.

R. S. To detect cerebral blood flow and neuronal activity. And the study showed that chronic sinusitis can alter brain activity. So I'm I was so happy when I read this research because it's actually it's actually showing what I believed to be true but couldn't really prove. So the M. R. I.

Showed that brain activity changes. It had changes associated with decreased executive function, maintaining attention and mind wandering and problem solving issues with sleep, integration of external stimuli and even communication and social behavior.

And then so the magnitude of brain activity differences paralleled the severity of the sinus infection. So talk about correlating with the patient experience right?

– Oh 100%. And it's so nice when we see that because obviously you already knew that clinically right already seeing those results. But I think it's so helpful for people, especially in this community where we are constantly I think validating people like this is not in your head.

These symptoms are real to actually then see the studies to help validate everybody's experience even more. I just it's how wonderful, – Right? Because how many times are patients told this is not in your head? You're making it up or have some PROzac, you're just depressed or? Oh it's just a judge.

– Yeah that's what drives me the most crazy. – Exactly. – So let's talk about mycotoxins now. So toxins from mold.

Mold, Mycotoxins, and Brain Inflammation

So how do they actually impact the sinuses? How do they affect the sinus? And where do they fit into this whole picture we're talking about? – So the nose is a major gateway for mold into the body that in the gut and micro toxins can affect the digestive system even even the pituitary system, the hormonal system cognition and mood. So almost all my patients suffering from mold allergies have sinus infections. So I'm measuring if they have an allergy to mold or even an allergy to mycotoxins on the labs.

And I'm also measuring. I'm also testing to see what infections they have in their sinuses. Usually they've got all of this going on. So if they've got mold in their sinuses, chances are they have micro toxins there as well that causes inflammation. So so then inflammation, the sinuses can cause other issues like hormonal disruption.

Mycotoxins can cross the blood brain barrier. Excuse me, this is my post covid voice. And so the olfactory nerve that sits in our nose sits behind our sinuses and is linked directly to the brain into the limbic system which is made up of three parts. So the hypothalamus, the master regulatory center for hormones for all the hormones are regulated literally.

I know you know this obviously, but just for our audience, I want them to do. So then there's the amygdala that's there, the fight or flight center which interacts with the adrenals in the hippocampus, the memory centers and if you have inflammation in your sinuses due to inflammatory cytokines, from chronic infections of the sinuses or from toxins like mycotoxins, the toxins remote or people who live where we do in colorado or California, wildfire particular matter that inflammation can travel up to the brain, I don't know if the particular matter can, but I know the inflammation that causes.

Can it can travel up to the brain by the olfactory nerve and we get inflammation in the hypothalamus where all the hormones are regulated can disrupt everything from menstrual menstrual cycles in women can get heavy menses

or early menses or low testosterone in men.

I see such low testosterone in my young men actually can due to inflammation due to inflammation of the hypothalamus. So the chronic science, inflammation plays a huge role there.

– Yeah, thanks for bringing that up. I'm really, I wanna pinpoint at this everything you're saying into this thing that we see where mold is, one of the great mimic ear's, right? So for all of our listeners you might be thinking if you're tracking this like oh my gosh, like my gut, my head, my fog, my mood, my menses.

And so it becomes a little bit almost overwhelming with all the symptoms, but I really hope you're really paying attention to it if you stay here and just and and listening to all the different symptoms that can really be caused by mold by sinus issues and by the combination of them both. And also with what you're saying, I want to ask you a couple different kind of side note things.

One with, you know this point that you're bringing up around these regulatory centers in the brain, right? And do you feel like because of mold impact on the limbic system? Do you feel like that is contributing to almost like this P. T. S. D. Impact that we can sometimes have in mold illness. People around being in moldy homes and traveling and what if we smell mold that feels very ptsd like do you see that?

– I do. So I think about the amygdala right? The inflamed the person get a lot of anxiety, fear adrenal stress and then the amygdala stimulates the hypothalamus that stimulates the adrenals to dump adrenaline and cortisol.

The person goes into fight or flight. We see it all the time. In fact I think that a lot of the times when people have emotional issues or mental issues I really correlated with a lot of infections and a lot of the times I think people come into the world we all come into the world with our human condition, we all have one or 10 of those. Right?

But I find that mold illness and also other infections and toxins the inflammation created by those things by those things toxins, infections that cause neuro inflammation and that can cause inflammation in the brain.

So it's this picture of mold and other infections and toxins which I find are really affecting people's brain and amplifying whatever whatever maybe I'm gonna say human condition were wired with whether we're wired with anxiety or maybe depression or maybe some people are wired with a little bit more anger.

These things I think get amplified by the infections? – Yeah that's that maybe epigenetic expression or just the predisposition or any of those things?

Absolutely tell us a little bit about because I know this is going to come up with the everybody that's listening to this. What tests are you doing to task the sinuses?

Are you doing Mark Cons are you doing other types of tests? What are you doing there? – Yeah I'm doing the test by microbiology. D. X. Was looking for Mark Cons which is a kind of staph infection which we find often in people who have mold illness or tick borne disease like Lyme and it's a staff that's very hard to treat which is in the sciences but we do treat it and others I'd say some doctors say there's no need to treat it.

Some say you treat it you see a difference. Usually I see a difference if I treat it. But I'm looking for Mark on other bacteria fungus is biofilm. So that's just a sinus swab tests. I'm doing that.

And I'm also looking for mold I. G. G. Allergens to see if the person's have an allergic reaction to mold. And I'm looking I'm often using the my micro test to see if they're having allergic reaction to mycotoxins. Or I'm using the Great Plains lab tests to look at their mycotoxin load. I'm looking at inflammatory cytokine tests all kinds of tests to weave it all together – And then are you can you explain to us the difference between the mycotoxin low test and the the allergy testing because I think that confuses people a little bit. – Yeah I think people often even think it's the same test but it's not. So people can have so Michael I'm gonna backtrack a bit. Mycotoxins are the toxins that molds release from the body. They they're they're the way to subdue our immune response.

Most bugs create toxins for that reason. So mycotoxins are the ones created by mold. Now people can be allergic to mold the bug, the spores people can be allergic to the toxins that the mold create or they could have a high load of those toxins but we don't necessarily know how that load is affecting the immune system.

I know I can measure to see if they're allergic that's with the with the my micro test. But I'm also interested in seeing what the load is because there could be other things that the micro toxins are causing like immune dis regulation.

And there's some research actually that talks about that.

Long COVID, Chronic Infections, and Sinus Symptoms

So that's why I like to look at what what is the body burden appear to be can never be sure but we can we can garner you can get an idea of what the mycotoxins load are or the allergic response.

– Yeah and I hope every thank you for explaining that I hope everybody is um this is kind of complicated medically but you know basically what our conversation here just to make sure I'm just gonna say it a slightly different way just to make sure everybody's with us.

But essentially this summer summarize what you're saying is basically that there's different ways we can respond to mold one is due to this like this toxic build up, this load, this other is due to this allergic response. Right.

Is there anything else you want to add to kind of that summary of just distilling it down for our audience around like the load and the difference between the body reacting to a toxic load build up versus the this actual allergy situation.

Anything else you would add to that summary to make it super clear for everybody? – Yeah, I love the way you've said that because it's perfect. It's that do you have an allergic response to the mycotoxins or is it more of a toxin reaction that you're having? And so I like to look at all kinds of toxins actually as do you? I'm sure.

So not only the mycotoxins, I like to look at glyphosate and other environmental toxins, metals, solvents past the sides so I can assess what somebody's body burden is with respect to toxins.

So maybe someone has not very many mycotoxins but they have a load of other toxins, but they have an allergy to micro toxins that we have to put all of this together.

Each person is a puzzle or a unique story. – Yeah, I like that frame unique story is really nice. How about covid? So you just mentioned you're getting over covid. What are you seeing as far as, especially within the concept of sinuses and this this conversation we're having.

What are you seeing as far as long term covid and after we're related to sinus congestion. Are you seeing a link there? – Definitely. So we're actually seeing a lot of long covid patients. Our clinic is part of Dr. Bruce Patterson's long haul group. So we're seeing a lot.

So we're seeing patients who have long covid that were already our patients, but more than the people who are already our patients, we're seeing new patients who were never sick before, which I think is interesting. I think that a lot of the patient that were already our patients don't have long covid because we were already treating, we're already treating concurrent infections if you will.

That show up often in long covid and even in the sinuses. But those with chronic sinusitis who have become new patients with long covid. You know, I'm often seeing symptoms like typical ones like nasal block or facial pressure, I pressure or runny nose, post nasal drip.

I'm seeing persistent sinus headaches um between the eyes into the forehead and migraines and then they can get non specific concussive symptoms like fatigue, mental fatigue. Eye fatigue, non specific dizziness.

So it's from inflammation in the brain. The inflammatory cytokines get in from covid, Easy through the sinuses and the gut and they can trigger trigger the glial cells in the blood brain barrier to create the same chemicals that cause brain inflammation or the inflammation from the sinuses enter the brain through the olfactory nerve.

So those are the symptoms I'm seeing. – Yeah. Yeah. It sounds like similar with a twist in many ways. Right. And how is that impacting then if you're suspecting like a long haul covid situation on top of mycotoxins, glyphosate, total body burden, all these other things, right? You're expecting this long haul covid?

Is that changing treatment? How is that influencing like your clinical process? – Yeah, that's a great question. So for the past 11 years or so I've been seeing people who suffer from chronic lyme disease or post Lyme disease and there's this intersection. I'm sure you're seeing it to between long covid and post lyme. We're seeing these similarity in symptoms.

And so what makes the patient susceptible to chronic lyme disease I've seen is very similar to what makes the patient susceptible to long covid in general.

They've got many concurrent infections that were not diagnosed prior? So the inflammatory cited kinds caused infections that were previously suppressed or dormant to now thrive just like in line. So with long Covid it can include tick borne disease or mold or parasites or other viruses. Epstein Barr viruses or mycoplasma pneumoniae er for example, I'm seeing these infections resurface.

Now we're talking specifically about the sinuses but it's true that we have to take everything into account in the patients with long covid. Yeah. – And then treat when we're talking about treating the sinuses. So whether it's you know inflammation from any of these various types of situations, whether it's infections like what I've seen in my clinical practice is the treating of the some of the sinus infections.

Sometimes it's the most tricky thing I feel like to treat. So I feel like this would be a really good question to go down as far as like what are your favorite treatment strategies have? How do you deal with actually whether it's mark on whether it's fungus, whether it's just generalized inflammation from the the allergic response to mold. How are you dealing with treating the sinuses?

– Yeah. So I think about it like the gut. And so I'm just gonna explain to the audience a little bit about the gut because maybe they've they've encountered got treatment more.

Right? So there are similarities between the sinuses and the gut. So the beneficial and pathogenic bacteria in our gut has been getting a lot of attention in the past many years.

But I think the forgotten piece or the not the not So research piece is the microbiome and the sinuses are seeing some research now. So there are millions of different types of microbes, both beneficial and pathogenic that normally live in our sinuses just like the gut.

So it's our sinus microbiome. The sciences were once thought to be sterile. And then there's been more recent development of new technologies like genetic sequencing that shows there's actually a diverse community of many species of microbes that have been found in our sinuses and like the gut including bacteria, fungi viruses and like the gut. The beneficial pathogenic and benign microbes live together in complex communities surrounded by biofilm they create.

So we can test for the biofilm the sinuses and I can't test for viruses but definitely bacteria and fungus is so it's an area where the research is in its infancy but it's happening so we can get this bio sis and the sinuses as well.

Like there could be insults to the gut like allergens, infections or antibiotics or many people gluten there can be insults so the sinuses, air pollution, allergies, infections, covid so we can get this diocesan our sinuses just like we can in our gut. So I think about it just like the gut.

And so treatment is like that as well so that when I talk about this treatment it's based on what I think is a

naturopathic doctor. It's in no way conventional treatment but I see it work often. So just like testing the gm microbiome.

I'm testing what I can for the sinuses. All the tests that we talked about earlier we don't have a sophisticated test for the sinus microbiome available yet.

But hopefully it'll come. And so then for for people who might have heard about the four rs of got repair, remove, replace re inoculate repair and rebalance something that Dr. Diana myself learned a lot about and do a lot of us. Those are just the tenants of naturopathic medicine in the gut right? So so first we remove in the gut it will be removing the pathogens and other inflammatory triggers.

So same with the sinuses I'm treating the infection that I could be stabilizing antifungal or even antibiotics if if warranted.

Testing and Treating the Sinuses Holistically

So depending on the infection and sensitivity and then replace is next in the gut. We replaced with anti inflammatory foods right? In the sinuses. I learned this from an E. N. T. Doctor lining the sinuses with organic coconut oil to make the area moist in preparation for the infection kill.

And to help decrease inflammation is important. So he told me that if it's dry in there then it's very hard to kill the infection. So you want to keep it moist and the coconut oil brings inflammation down. And then the third step is to re inoculate the microbiota with beneficial bacteria. So just like in the gut so we want to put probiotics in there. So there's a great nasal probiotic that can be used for this. I like nasal biotechs and the fourth step the final step is repair. So in the gut we can repair the intestinal lining with many herbs and the sinuses. I'm using nasal peptides maybe BBC 1 57 or um that will bring inflammation down or C. Max which will help with brain inflammation.

See link will help with anxiety or RG three to decrease inflammation in the mitochondria in the brain. So I'll use neural peptides to decrease inflammation anxiety once the infections are killed a lot of times people might want to use the peptides first because I just want to get rid of that brain fog bad feeling in my in my mind. But usually I'm finding those peptides don't work until we deal with the infections first and then they work amazingly.

– I love everything you said. It's such a great way of framing this for people the four R's of the gut and applying that to the sinuses. So I think there's there's so much good there and the nebulizer component of things.

I also have seen that that's such an important way of actually disseminating the medicine there and I love that you're finishing up with the repair with the peptides.

Are you actually you're using the peptides then internationally? I imagine. – Right so the max and see links, you can see like you can spray them in and then bp so 57 you can get spray form.

– Yeah and just so everybody knows like these are fairly easy, easy things to get like these compounding pharmacies are becoming more and more aware of these Pep types. So they do have to be prescribed at least they do in colorado where I live I imagine they do in California as well.

– Yes. And there are two places we can get the peptides from yet but I get mine from a pharmacy in Washington. – Okay. Yeah. You different place from a ko custom Rx tailor made. There's a few, what is the one you use?

Crime? Okay. That's good to have on my my list as well. So I wanna name for some of our practitioner listeners, you know where to find some of these. So then where from my thinking about a treatment perspective of all of this, where do you put it? Like somebody comes in and you know you said, okay, this is their unique, I forget what you said, their unique thumbprint or how did you describe it?

– Their unique story. – Their unique story. I love that. – That works too. – Yeah. Either way it's a good way of framing it. So somebody comes in with their unique story and let's say they have you test and they have all of these

different things going on in their sinuses and they're anxious and they're cognitively not functioning well and you tests for multiple vector borne these insect borne infections and they've got issues. You know this really, really common picture where people have so many different different stories of picking from so many different, similar disease processes. Where do you put in if somebody comes up with some of these sinus problems and these this infection, this inflammation this need to repair re inoculate all these things. Where do you put that in with the whole overarching treatment plan? Is there a general, I know it's a big, you know we're talking general now but is there general way you can help us orient to where this fits into the big picture?

– Yeah, that's a great question. So before I kill any infections, I want to modulate the immune system because I know that killing infections and even detoxification is going to cause inflammation. So I'm I'm putting really good band AIDS on the on the immune system first. So they start off as band aids because I haven't treated the cause is yet right. But once I treat the cause, those band AIDS then become um nervous system retraining or immune system retraining.

And those band AIDS for me to start with our peptides. So I like to use BBC 1 57 to bring information down in the whole system tv for frag to modulate the immune response. A lot of these patients have mast cell activation syndrome. So I'm using K. P. V.

And lexi Knox peptides or anything that I think is needed for that person based on the testing and based on their history that that tells me they need immune system balancing First, before the advent of peptides, I wanted to do it.

But it wasn't as easy. So I'm modeling their immune system first with peptides then it's kind of like pick up sticks, right? Because these patients have so many different infections in different areas of their body and I also tell them it's like layers different layers of a cake, right? So which one is at the top, which one is at the bottom? Which one is screaming the loudest?

Sometimes if I go for the infection that's making the most noise, it can actually the patient isn't ready for that. So we have to it's like pulling out very gently very delicately.

Which which one to go for first. So it really depends on the patient. You know, naturopathic medicine. We're taught treat the gut first. Right? Usually usually that's a good rule of thumb.

Sometimes I am treating the sinuses first though because I'm thinking about about their brain, I'm thinking about their cognition and I think about the gut brain connection in the sinus brain connection and the sinuses are closer in proximity than the gut.

Sometimes it makes more sense to come in and treat the sinuses after I've put in place the immune modulator torrey treatment with peptide. – Yeah, thank you for that.

That makes a lot of sense. And I like the analogy of just okay, where is that thread? Right, where is that place that we can pull and start to get these complicated things to unravel what else in our, in our last minutes together, what else do you want to make sure?

Just like take home points, what else you want to make sure that everybody is really clear on any message that you want to make sure to really just impart on us today.

– Yeah. I want to make sure that people know there's hope in long covid because there are so many people who are suffering right now and they never were before. So you and I were seeing patients who suffered in a similar way that people did with long covid prior to the pandemic.

And it was only the small subset of the population that was like seeing the underworld of health. That's what we saw now. All of a sudden it's coming, it's coming to the surface, more people are coming in but there are doctors and there are treatments, doctors like you and I and others who have been working with complex chronic illness for a long time.

And so the stage is set to help you. There is hope. That's what I want people to know. – Thank you so much for that message. And I want also people to know a little bit about your giveaway, which is your pre talks e book. Can you tell us a little bit about that and about the concept pre talks. – Yeah.

Preparing for Detox and Final Takeaways

So a lot of the times, I know you and I talked a little bit about this before we started our interview today. People want to do a detox right away or they've already done a detox maybe at their yoga studio or just casually, you know at home with a book or something and it didn't go well.

In fact it went terribly. Maybe nothing happened. But that happens a lot and it's typically because they're just not ready to detoxify. Why are they not ready? Maybe they have gut issues first.

Maybe they have constipation. And if we're trying to mobilize toxins in the body and the person is constipated, those toxins are just gonna recirculate or maybe they have interstitial cystitis or something. Something that makes them not a good candidate for detoxification because detox, like I said before causes inflammation that just comes with the territory. So if you're already under a lot of inflammation, we want to put those fires out, prepare you for detox.

And so that's what my book is about. – This is so important. You guys like all of this is so, so, so important. I think so many people just think that this like more is better and just like push the toxins out as fast as you can is the way to go and I could not agree more with your philosophy around like we gotta get prepared for this.

This is inflammatory, it's gonna be harmful. We gotta do this. This inflammation, this anti inflammation pre talks type of work. So I hope everybody takes a huge advantage of of this offering.

It's super, super generous and special and we really appreciate it. – Thank you so much Diane. – My pleasure. My pleasure. Well, it's certainly been a complete honor to have you with us and great knowledge. I think this is a really, really important topic and really important to talk about and a missing link, you know. So thank you for just educating us on this huge missing link of chronic disease and of health care.

– Thank you. It's been an honor to be here.