Introduction to Microplastics and Health

The microplastics, the plasticizers. You mentioned found in the carotid arteries of people with dementia or strokes, et cetera. Can you talk about that a little bit more and its effect on our health?

For those of you who have not really followed the medical literature, The common knowledge is you have about enough plastic in your brain to make about a spoon at this point.

It's like 5% of most people's brains now is composed of plastic. That's how much micro-plastic we're getting in. Now, why is that problem? These micro plastics are carriers.

Right? They're vectors and they're carrying PCBs and dioxins and plastics and all of these different chemicals that are kind of hitching a ride. They are hitchhikers with these microplastics.

So they are getting into these places in the body that have been damaged. And they basically at this point, they showing at the brain, the carotid arteries, heart, and the effects on heart attacks.

There finding heart attack rates when you have these levels of micro-plastic much higher within several years. It's affecting every organ of the bodies.

Welcome to Demystifying Pans and Pandas, the podcast where we uncover the mysteries, breakthroughs, and hope behind these life-altering conditions. I'm Dr.

Nancy O'Hara, a board-certified pediatrician, educator, an advocate with over three decades of experience helping children and families navigate the challenges of neurodevelopmental and neuropsychiatric conditions, especially pans and pandas.

These disorders can feel overwhelming, but here we'll break down the science, explore transformative treatments, and share stories of resilience and recovery.

Welcome to Demystifying PANS and PANDAS

If you've ever wondered what's possible for your child or how to find answers, this is the place to start. Let's dive in. Hi, everybody. It's Dr. Nancy O'Hara and welcome back to Demystifying Pan's Pandas.

I am really thrilled and honored to welcome Dr Richard Horowitz to the podcast. Richard has been a leader and maverick in the field of vector borne diseases and health and chronic illness in general.

for decades. He's a board-certified internist and medical director of Hudson Valley Healing Arts Center. he's treated over 13,000 tick-borne disease patients over more than 30 years from all over the world.

And he's trained and continues to train over hundreds of healthcare practitioners. He's a consultant to government agencies and he has published several scientific articles on classical and integrative solutions for vector borne diseases as well as COVID and just had a fascinating article that we'll discuss today.

accepted to the Journal of Alzheimer's Disease case studies.

Dr. Horowitz's Background and MSIDS Model

And he has developed a term called multiple systemic infectious disease syndrome, MSIDS, that we're also going to talk a lot about today, which is describing the symptom complex arising from factors, including infections,

inflammation, and immune dysfunction.

He's written several books, How Can I Get Better? Why Can't I get Better?, and then the newest one, very soon in October ending chronic illness because we all know and everybody that listens to this podcast the chronic illnesses that our children has have inflammation at the base and the 16-point diagnostic map of MSIDS really brings that all together for our adults with chronic Illness with Alzheimer's for Our children with autism and all those with pans pandas.

So dr Horowitz. Thank you so much for joining us Thank you, Natsi. It's great to join you. I've been following your work, by the way, for years. You're doing great work also.

So congratulations also on kind of being a leader in your field. Its been great. Thank You. And it's always great share patients with you even 30 years into it.

For me, I always learn something and really appreciate the ways you go about things and the detective work. As we both know, doctor is both teacher and detective.

Well, and regarding that for people that don't know, I do have a, uh, sub stack called medical detective and it's, it is free to sign up. There's no charge.

Today's one is actually on the eye manifestations of Lyme and tick-borne disorders like Bartonella. Um, we're going to discuss that today because of its relationships to pans, pandas and autism and many other diseases.

But, but for those of you who are detectives and are looking for answers for your illnesses, you may find the sub-stack medical-detective helpful for you.

Yeah, it really is a great substack. Absolutely agree. Let's start with the 16-point MSIDS model because I think some people that may be listening to this, both practitioners and parents, don't really know what that is.

And I really think it is at the heart of everything we talk about with neuroinflammation. Yeah. So, you know, it's interesting when I started medicine, I've been in medicine now for a little bit over 41 years.

And when i started as a board certified internist, the toolbox that they gave me in classical internal medicine works extremely well for things like blood pressure, cholesterol, heart attacks, strokes, even cancers in some types.

But what I noticed was happening most of the time, we were naming a disease and then we would throwing pharmaceuticals at it instead of figuring out why the patient got it in the first place and whether it was even possible to reverse it.

So what happened over the years is as I was starting to see these 13,000 plus chronic Lyme patients, I discovered that there were these multiple factors underlying their illness.

And so over these 41 years, what I'd discovered, and I published the first article on MSIDS, Multiple Systemic Infectious Disease Syndrome, in the journal Healthcare back in 2018, but it was in my New York Times bestselling book, Why Can't They Get Better from St.

Martin's Press back 2013. What these 16 factors are, and you kind of highlighted it a bit, in all chronic illness, inflammation is basically underlying it.

It's both in acute and chronic. But what most people are not realizing is that we have a huge chronic disease epidemic at this point in our country. So 60% of Americans have at least one chronic 25% of Americans have two or more chronic diseases.

86% percent of our health care costs are chronic disease. 70% the deaths of this country are a chronic. And yet, we don't have a model to address chronic by playbooks.

So it started bothering me a little bit when I started figuring out that when we talk about chronic Lyme disease, it was much more than Borrelia burgdorferi, the agent of Lyne disease.

It was also parasites like Babesia. In some cases, it was viral infections that were reactivating that was causing them to be ill. So it turned out over the years that we just developed this model one by one.

And it's not like I myself like discovered anything in this. I just kind of put it together in a gestalt for people. What it is, is I described this 16 point model.

like somebody going into a doctor's office with 16 nails in their foot telling the doctor they have foot pain. And the Doctor looks at their feet, finds one nail, pulls it out and says, why don't you come back in a month and tell me how you're feeling?

And it's like you and I both know, okay, there's 15 nails still, it probably not gonna work too well. So what these nails are the following. There are six inflammatory factors.

I call these the six rivers of inflammation going into an ocean of information with 10 downstream effects. So the sixth primary rivers have inflammation are one infections, a bacterial infections.

In my world, it's Lyme disease, Bartonella, but also can be mycoplasma, chlamydia, pneumonia, tularemia, there's a lot of other infections that can And strep.

Right, and streps, of course. B, viral infections. In our long COVID patients, we will see Epstein-Barr reactivation, herpes virus 6 reacti-vation, right, which also react-ivates in chronic fatigue, fibromyalgia cases on occasion.

C, parasites. We find Babesia, a tick-borne parasite in a large percentage, somewhere between 60 to 80 percent, minimally. And then we find fungal infections like candida, but also molotoxins.

So infections is one, environmental toxins is two. And we're finding moltoxins in 90% of our chronically ill patients. Oh, I know. The problem with that is the mol toxins cause exactly the same symptoms as chronic Lyme disease in some of these infections.

If you have neuroinflammation in your brain, like with Pans Pandas, and you're trying to figure out, why is my cognition affected? Why is brain not working?

These mold toxins suppress your immune system. Gliotoxins will suppress it. Lyme disease will supress your system, Bartonella can suppress the immune systems.

Long COVID can deplete your T-cells. So what's happening is these infections and toxins are affecting your immunity system so that you can fight these infection properly and you do get autoimmune manifestations, right?

Lymed disease and Bartonella cause auto immune manifestations all the time, you're seeing it in your pants patients all of the times.

Six Rivers of Inflammation and Chronic Illness

So we have infections and toxins at the top of the list, mold and heavy metals. But by the way, that still includes things like PFAS and bisphenol A and hundreds to thousands of toxins getting in every day, right?

That are all inflammatory, carcinogenic, et cetera. Plasticizers. Absolutely. Oh, plastics are a big one. I mean, I have a huge section in my new book on plasticizers because they're now finding these microplastics in carotid arteries affecting strokes and heart attacks at this point.

Numbers three and four is the gut. So what your microbiome looks like, because you're finding if you don't have enough good short chain fatty acid bacteria, which lowers inflammation, that is going to affect.

They look at Prevotella species in Bifidobacterium, which is affected by long COVID and even Lyme. We look at that and also leaky gut and mast cell activation.

If you have intestinal hyperpermeability, it increases inflammation. You're starting to get lipopolysaccharides, LPS in the bloodstream. It drives inflammation, It causes your blood brain barrier to become more leakey.

That affects your appendix and all your neuroinflammation. Number five got leaky brain. There it is and number five is vitamin mineral deficiencies Not just standard minerals like magnesium iodine copper zinc but red blood cell levels Because that's where 99% of the minerals are hiding if you don't have enough minerals You can't detox all these chemicals coming in or deal with the inflammation and the sixth is sleep because in my world with Lyme people don´t sleep They don"t fall asleep They wake up several times in the middle of night or they're sleeping 16 hours a day and they´re not refreshed Infections, toxins, microbiome, intestinal hyperpermeability, vitamin mineral deficiencies, sleep is the top six rivers of inflammation, and then it has 10 downstream effects of this inflammation like mitochondrial dysfunction, the parts of your cells that are dealing with energy production in the brain, in your heart, and all of the liver, all the major organs of you body, it gets affected because when you have free radical oxidative stress, there's nothing to protect the mitochondria from that stress and it's been associated with Alzheimer's and many other diseases.

But we also find the inflammation affects your hormones in the brain. The hypothalamic pituitary axis gets affected, so men come in in their 20s with low testosterone, women have early menopause, the adrenals in my patients, 99 literally almost 100% have low adrenal function.

Absolutely. And the children have earlier puberty. It's not just the adults, it's happening in our kids too. Yeah. So again, a lot of doctors don't think of doing this, but by going to this map and then looking at mitochondria, hormones, the liver, for example, one third of the world's population has non-alcoholic steatohepatitis, fatty liver.

That causes insulin resistance. Insulin resistance drives more inflammation. And then there's neuropsychiatric issues, deconditioning, pain syndromes that arise from all of this, and immune disorders.

We see immunoglobulin deficiencies, we see autoimmunity, right? Which you're seeing in your population, driven again by infections and toxins, because all these toxins drive auto immunity, so do the infections.

But instead what doctors are doing, they're naming the disease and there's nothing wrong with, you and I both know IVIG works great for some of these PANS-PANS patients with treating infections, but you still have to treat the infections.

You still to look at the immune system and see why it's dysfunctional. Right. And so much to unpack there. First, I want to start with, you and I have both talked about our mentors, mine being Dr.

Sidney Baker, and one thing Sid always said about something you said is he calls conventional medicine, name it, blame it. Tame it medicine. We name some disorder, we blame everything on it and we tame it with some pharmaceutical.

Really, everything that he did in his life with children with autism is exactly what you are talking about with this MSEDS. It is such the crux of everything we deal with.

And along those same lines, you know, so many of our families say, oh my gosh, I thought it was just strep. There's so much more things. No, this MSEDS model is exactly what we try to help families understand, that it's not about one infection.

It's about all these infections, toxins, gut being the first brain. deficiencies, sleep, you know, and as we both know your immune system regenerates during sleep.

Your glymphatic system drains during asleep. If you're not going to have good sleep neither of those are going be working and 60% of people of adults with chronic illness, more than 50% percent of children have at least one

chronic and if we keep going the way we're going we are just a dying breed.

And in fact, you know, regarding autism, what's really interesting in my new book, Ending Chronic Illness, when I discovered when Simon and Schuster gave me the contract to write this book I knew that the 16-point MSIDS model was for Lyme disease and also for long COVID.

I published it in Microorganisms in 2024, where all 16 MSIDs factors were associated with long-COVID. And I, I'd published even the first article in the world literature on long COVID using glutathione back in April, 2020. at the beginning of the pandemic, I don't know if you even knew this, but because these patients with Babesia were coming in short of breath and I had used IV glutathione to help down with the cytokine storms, absolutely.

I said to myself, you know, if that's gonna help with all the shortness of breathe and lo and behold, not one of my patients died during the entire COVID pandemic using NAC, alpha-lipoic acid and glutothione.

Exactly. So I've been researching this but then when we did the deep dive, We discovered that autism had all 16 m-sense factors. We discover that Alzheimer's had 16 M-Sense Factors.

And so did cardiovascular disease, cancer, chronic fatigue syndrome, fibromyalgia, digestive disorders, hormonal disorders. Every major disease I looked at, had all 16 factors.

And those of us who do integrative functional medicine, we know about the microbiome. We know, about them mitochondria. But what most of, us I don't think do know is that every one of these chronic diseases, because I didn't know it.

I only knew it when I started writing the book and doing a deep dive in the literature. every major chronic disease habit and what this does and means for us.

We have a brand new way now of looking at chronic illness. where we've reversed Crohn's patients, where got them off their Crohns disease medicines because it's inflammation in the gut.

Where we had kids who were diagnosed with autism spectrum disorder. It was actually a mother who had transmitted Borrelia burgdorferi to her child with Bartonella and mold toxins.

Like we go through it piece by piece. So people, by the time they get to the end of the book, they go, oh my God, there's hope. And I just spoke to a doctor yesterday whose father in California has Lyme and Alzheimer's and I said, Our article was accepted in the Journal of Alzheimer's Disease Case Research that all 16 factors on the MSIDS model has now been associated with Alzheimer.

And we've managed to reverse the Alzheimer biomarkers for the first time using a nine-week oral generic Dapsone combination therapy. It had never been done before in literature.

I mean, this is like really exciting stuff for those of us who've been in field for a long time. It really is. And again, there is so much overlap with what we talk about in my world with children with autoimmune encephalitis of the basal ganglia or with autism with Alzheimer's disease.

You know, in this article, I think is a game changer. And as I said, it was just accepted into the Journal of Alzheimer's disease case studies and and talk a little bit more about it because I think it's so fascinating.

The way that you're looking at it there and the way the that this particular person improved based on the MSEDS model and treating it the way you did.

So you know that these kids who come to you with PANS-PANS, as many of them, because I don't have anywhere near the experience you have, but I have seen some of the them.

A lot of these kid do have Lyme and they have Bartonella with autoimmune encephalitis. And a lot of the parents

went from doctor to doctor.

Long COVID, Autism, and Alzheimer's Connections

It wasn't just strep in a lots of these cases, it was other infections also. And one of those patients went doctor-to-doctor looking for answers, and what they didn't realize is the tick-borne infections were there.

So I have a questionnaire that we validated with University of Researchers from State University at New Paltz. This was done, I think, eight, nine years ago in the Journal of Internal Medicine.

You can find it on my website, cangetbetter.com is my web site. Just look under resources, you'll find the questionnaire. So when the parents filled out the questionnaire, if they score over 63, meaning you have a very high probable chance of having chronic Lyme, especially if the child has migratory joint pain, migretory muscle pain or migreatory nerve pain.

So in this case study that I published, and this had never been done before. Most of my patients in my practice had done Dapsone combination therapy, and for those of you who don't know what it is, I published the first article on chronic Lyme disease and Dapzone back 10 years ago in 16. John Hopkins researchers, as well as University of New Haven, Kim Lewis from Northeastern, Stanford, we discovered that Lymen and Bartonella were what are called biofilm persistobacteria.

What that meant is These bacteria go into hiding under biofilms. Biofilmes are like you go to the dentist to take the plaque off your teeth so you don't get gingivitis.

By the way, they've also discovered that porphyromonas gingivalis under the gums is one cause of Alzheimer's, right? If you have gingavitis, it gets up.

So you want to go the dentists regularly. But they discovered when Lyme was a biofilm persister bacteria, I said, oh, You mean like tuberculosis, like I was treating in residency 41 years ago during the HIV epidemic, and I had been kind of really wanting to use drugs like rifampin with, you know, INH, pyrazinamide.

So what I did is I looked at the literature and looked the leprosy regimen that was used to cure lepercy with rifapin and dapsone, which is a biofilm-presister bacteria.

Dapsone had excellent penetration in the brain. It hits autoimmune manifestations, which in your world and my world also apply. it has anti-malarial effects against Babesia.

Its anti inflammatory, it hits what's called NLRP3 inflammasomes in brain, its one of those switches in a brain that turns on inflammation, and its a biofilm persister drug.

It hit it checked all the boxes. So I knew it was going to be a home run. All I did was add doxycycline or minnow to it and try it on the Lyme patients.

And that was my first article in 2016. Well, now fast forward 10 years, it took me about a decade To figure out the exact dosing of Dapsone and how to protect against the side effects of anemia from folic acid, mech hemoglobin where you don't carry oxygen, it took me about 10 years playing with this drug with methylene blue and rifampin and zithromax and doxy, but I figured out an eight to nine week oral protocol.

So this one patient in my practice who met every criteria for chronic Lyme post-treatment Lyne disease syndrome, that's the beauty of the article, not all my patients, by the way, have rashes, ELISA positive, C6 ELISA positive.

IgM Western blot positive IgG Western Blot, positive IGG immunoblot. She was positive every which like nobody can say this was not a chronic lyme patient.

Right, right. So she had Alzheimer's markers in her blood. Now, most Lyme docs do not bother to check these new

biomarkers for Alzheimer. And you and I can discuss in a second whether you're checking them, in fact, and the kids as a marker of inflammation.

You and should talk about this in the second. Okay. I started discovering before I finished clinical practice, right now I'm just doing consulting with other doctors to train them and help patients that way.

We started checking our chronic Lyme community and found in my population about 50% of my patients had elevated p-tau 181, p tau 217, amyloid ratios 42-40 were off, or they had an elevated neurofilament light.

These are markers of inflammation. Um, these are proteins that basically drive inflammation in the brain associated with Alzheimer's. So, no one had ever, we knew in autopsy studies of people who had died that Lyme is associated with Alzheimer's.

So about four years ago, Eva Schoppe and her group from the University of New Haven published that in autopsies specimens of Alzheimer and Parkinson's, they found biofilm, amyloid, and p-tau in the brains of these Alzheimer patients, but no-one had every tried a bio-film persister drug regimen to reverse those effects.

It had never been done. So I told my patient who had chronic Lyme, I said, listen, your p-tau 217 level is above range. P-TAU 181 was fine. And I had rheumatoid factors, not rheuma-toid arthritis, just nonspecific mark of inflammation.

I I don't have enough patients at this point to prove it, but, and she was APOE 3.3. She was not genetic marker for Alzheimer's, even though her family had Alzheimer in it.

I said to her, you have joint pain, You think your memory's fine, But let's do the Dapsone protocol. We gave it to here and three months afterwards, her PTAL 2.17 reversed into the normal range.

Now you understand this has never been done. This biomarker, if you look it up, 15 years after you get ptau-217, it looks like you're becoming demented.

Like there's never been a study showing with a short-term protocol you can reverse this. So we reversed the p-taut-277. Her beta-amyloid ratios improved.

It actually, you could see there was less amyloids that was actually taking place. And at the same time, her rheumatoid factor reversed. She said, my joint pain much better.

Guess what, doc? I thought my meditation was responsible for my great concentration. It turns out I'm sharper. And I think it's because the p-tau-217 is lower.

So we got this published. Now this is kind of a new bar for doctors. Whatever the disease you're calling it, whether it pan-spandas, autism, Alzheimer's, ADHD, it is all inflammation in the brain.

We now have these biomarkers. If you use the 16-point MSIDS model in this patient, by the way, She had heavy metals that we had to detox, right? We went through the MSIDS and we also had the deal, by the way, with Bartonella and Q fever and other infections.

But the point is we did something that no one had ever done. And this gives hope because 25% of the Alzheimer's patients are expected to be due to Lyme disease, Borrelia burgdorferi.

The rates of Alzheimer disease are 10 times higher when you have Lymen-spirocheteal infections, including denticola spirochetes in the mouth. So hold on, we have an Alzheimer's epidemic where 46.5 million Americans have preclinical dementia.

The rates are doubling. And everybody says, well, what do you do? You're going to give them Licanumab, a monoclonal antibody, which really doesn't change the course and can shrink your brain and cause brain bleeds.

You going give him acetylcholinesterase inhibitors. Um, you're gonna give a memantine, Namenda. That doesn' change course. So what's astonished me is the doctors out there doing Alzheimer's have not said, why is beta amyloid forming in the brain in first place?

And we're in a middle of an epidemic of Lyme disease at the same time we are in middle an epidemic of Alzheimer. So it was a really timely article before the book came out.

And again, in my new book, Ending Chronic Illness, I discussed those 16 points, if Alzheimer and all these diseases in great detail and how you use it with your doctor.

Well, and you brought up a great point.

Dapsone Protocol and Alzheimer's Biomarkers

You know, this is not something I ever measure in children, but maybe we should be measuring in these kids with neuroinflammation, the PTAL-217, beta amyloid ratios, etc., and see how the interventions we're using, which sometimes are and maybe should much more the DAPZONE protocols, to see if we can reverse this.

I mean, I think it's going to be fascinating because it kind of now stimulating new scientific research, for example, in your area. And others like, hold on, we have biomarkers here that I never really realized we could apply for one group of patients to another because they're markers of inflammation in the brain.

I didn't think of doing it until like a year and a half ago. They haven't actually been out for that long. Normally I thought, oh, you need an F18 PET scan and you needs spinal taps.

But then I realized these markers are becoming available. Why don't we try it? There's another doctor, by the way, who I do consults with for her patients.

I asked her to check her patience with chronic Lyme. She did it on 50 patients, she said 33% were showing up with these markers. So now the new bar for the Lyne community is you may have IV ozone and SOT therapy and all the other things you're doing, herbs, great if it's helping people.

But is it reversing these markers of inflammation because we need to protect our patients' brains and the rest of their bodies as time goes on? So it's kind of now a new bar for people to look at it this way.

Yeah, I think it's fascinating and something for all of us that take care of children, we should be thinking about because, you know, this lifelong chronic illness doesn't start necessarily when you're 50 or 60 or even 20. It starts before they're even in the womb.

And we need to think about this in our moms, and congenital tick-borne diseases as part of the picture with autism, for example, in all that. But this is a fascinating thing for us to learn.

And I'm going to take it in today and test this on more of our kids that have, you know, what they have with some of the tick-borne diseases already neurodegeneration, regression, even at their young ages.

So fascinating. Yeah, no, I think it really opens up like new treatment avenues because even the Pans-Pandas group, and again, i haven't had as much personal experience, but we've had patients we shared who are on IVIG and they're doing well and there are antibiotics doing.

Well, as you know, in your field as in mine, it's I don't know why it's so controversial, quite honestly. I mean, you read the literature and it is like, really?

Is Pans-Pandas really a thing? It's like yes, if it a think. What are you kidding me? Of course it, have you not been in clinical practice? But what it means is, let's say you had a patient with PANS- PANDAS where the Lyman or Bartonella was in part driving the neuroinflammation.

In kids, what's really nice about the DAPTZONE protocol is you don t need the same doses that you use for adults. So in adults, I have to do double-dose dapsone, 200 milligrams for a month, finishing with a four-day high-doze dapzone pulse for Lyme if Bard is not there.

If Bard's there, I need a six- day high dose dapse zone pulse at the end with at least three more two-week pulses of antibiotics. Now, in most worlds, that's not a lot of antibiotic, but you'll probably find in the kids, because I've spoken to nurse practitioners who've had these kids with autism and the rest, they found that low- dose Dapsome.

has such amazing penetration in the brain that you give them 25 or 50 milligrams, you're hardly going to get any anemia at all or side effects. The kid's brains wake up because you are lowering down.

Whether the Dapsone is hitting Lyme or Bard in brain, it is affecting the switch I talked about earlier called these NLRP3 inflammasomes. You have these cells in your brain.

you know this, but this is for the audience. They're called microglial cells. There are these small cells in the brain that also clean up the brains. You were talking about the glymphatics.

And when these turn on, when you get microglial cell activation, this causes all these inflammatory cytokines of TNF-alpha, IL-6 to come out, and it inflames the branes.

So the kids can't think and they get upset and have all of these mood disorders. If the Lyme and Bart are driving it, even low-dose Stapzone, you'll notice, I will suspect, if you've not tried this, that you're going to probably find it helps.

The key will be the age and the weight of the child to figure out what dose they're going to need. But in one of these studies I published back in 2024 in microorganisms, and she allows me to talk about her case because she's written a book about it with Olivia, but you look fine.

I started treating her at 10 years old. She was the youngest pediatric patient. she got up to 100 milligrams of Dapsone and stopped for years because he felt so well.

It didn't cure her, but before she was ready to go to college, we did a Bartonella fish, it was positive. She finally did the nine-week Dapsone protocol, she's now three to four years in remission without one symptom.

But the 100 milligrams of Dapzone, which most people can tolerate well, that put her in almost full remission for years where she didn't need to do any more antibiotics.

So, I think it's a matter of learning that in the kids, and again, you'll be one of the pioneers, by the way, who will be looking at this, we need look more at the low-dose Dapsone in Pans-Pandas group, in Autism group and the ADHD and looking up the 16-point MSIDS factor to see what is driving the neuroinflammation in these kids.

Exactly. And so key, and again, so much to unpack in all of that. But one of the things I want to address is the use of your questionnaire, because I use it almost every day in my practice.

And when I'm teaching other practitioners who are complaining or families that are explaining about the expense of testing, for example, I am like, you use Dr.

Richard Horowitz's questionnaire and you're going to get the information you need and it's not going cost you a dime. And talk about using that questionnaire in children because I get pushback about validation of it in the children even though I find it my own practice so very very helpful.

Yeah, so again, the article was published in the International Journal of General Medicine, I think, back in 2017 with Dr. Phyllis Freeman and Dr Mary Elisaterra.

So this questionnaire was validated in 1,600 people. It was not a small subset of people, it was three medical

practices, 1,600, and it a well population as well as a chronic Lyme population.

And what we found is if you scored on the questionnaire less than 25, there was very little possibility you had Lyne. Between 25 and 42, there was a low probability, 43 to 62, moderate probability.

But over 63 was two standard deviations above the mean, and it was like an 88% chance you had Lyme. In fact, it is better than two-tiered testing when you go to Questra LabCorp to do the regular test.

It was more effective in finding Lyne. The key to using the questionnaire, though, is not just the score. The key is migratory pain. There's only seven diseases in medicine that cause migrating pain, and most of these diseases, I used to joke with doctors, unless you're at the bottom of your medical school class, you generally can tell the difference between lupus, inflammatory bowel disease, gynecococcal arthritis, Reiter syndrome, hepatitis and acute rheumatic fever.

You know the different. Those are the other six diseases that caused migrator pain and they don't even last. It's just temporary recorded in the medical literature.

Lupus is probably the closest you got to watch for because lupus has a lot of itises with inflammation of, you know, cerebritis and arterialitis, and nephritis, just like Lyme causes inflammation.

But if you have a double-stranded DNA and a Smith antigen with the criteria for lupa, she'll figure it out. And it's never really been a problem. The questionnaire does work.

Questions 1 and 22 on the questionnaire of day sweats, night sweats. Chills, flushing, cough, air hunger are suspecting Babesia. And we find like if the kids, for example, have sweats that the mom or dad can't figure out, Babesia is a parasitic co-infection that's getting into a lot of these kids and adults.

So the questionnaire is also useful in that regard. But most of the patients who filled this out migratory pain is present in like 95% of cases. Right.

It's not just the score. As an internist, you're always looking for those diagnostic medical detective clues. How do you know Lyme is there? Bartonella, you know, it's a whole separate story.

The pain on the bottom of the feet. Kids get these, as adults do, they get this classical stretch marks. If you don't know about these stretch mark, s they almost look like you gained and lost weight, but they're perpendicular to the skin planes many times and are purplish.

And if the kids have a lot of neuropsychiatric issues with rage and emotional things that just even seem out of control in a Pan's Pandas population, you gotta look at Bart.

Bart is showing up in 90%. And a lotta times you'll get it from a flea bite or a cat scratch or fly bites, it's not just from ticks.

PANS, PANDAS, and Pediatric Treatment Approaches

and it stays dormant, then all of a sudden these other infections and things come in and reactivates. And it's like pouring gasoline on the fire and just makes everything worse.

It's again where the 16-point MSIDS model can help with PANS-PANSAS. Again, for the full review, again, if you look at ending chronic illness, you'll look each chapter.

You will see how it applies to neuroinflammation in the brain, cardiovascular cancer. I mean, I'm so excited about it because I never thought in my lifetime I would discover something in medicine that not only looks like a cure for Lyme, but an answer for Alzheimer's, an answers for all these chronic diseases.

It's like going back to what you started with today. My teachers who taught me, who said the most important thing in medicine when you go out is to put yourself in people's shoes, exchange yourself with others, and then do for them what you would want done for yourself.

It is interesting because every time I would see these difficult patients who are complex and I said, well, hold on, they went to 20 doctors who can't figure it out.

Let me see what I can do. I would generally find if I kept looking and this, you know, 16 point M-sense model using that lens kind of makes it easier for you because you're nowhere to look.

But I don't think I wouldn't have discovered all of these things if it wasn't for this motivation that my teachers gave me, which is always work for the benefit of others, relieve their suffering, have love and compassion.

And it's so funny, we learn these thing, but we don' necessarily put them front and center when we're doing medicine. For me it has made all the difference in the world.

Exactly. And you know, you and I have talked about that a little bit and i love the phrase, it's so succinct, exchanging yourself for others, and doing to others as you would want done for yourself.

But the looking for answers and the one my mentor always used was, follow those who seek the truth. but flee from those who have found it. And it's like what you were saying before, you can't believe people don't BELIEVE in Pan's Pandas.

You know, those are people run the other way. Find people like yourself that are exchanging themselves for others because that piece, You and I have both helped people in our own family.

people that we take care of. And it's that putting yourself in their place. What haven't we done? What more do we have to look for? Not what medicine can we put it on to suppress the symptoms and get them out of our office.

You know, and I don't mean to say that too meanly, but… no no it's true and look i mean i'm not you know a maha proponent necessarily but i understand why these people are so upset the chronic disease epidemics in this country with the level of autism and and pens pandas and all of these neuroinflammatory disorders i get why people Are upset and that the answer is not just pharmaceutical drugs because it has not solved the problem so you i am hoping you I think it is a bit more complex and why kids develop autism that just getting vaccines, I don't think that is the primary issue from my perspective.

I think what's happening in a lot of these kids, from what I can see, having done a deep dive in the medical literature, is, the amount of inflammatory factors in these children by the time they get a vaccine, will sometimes put these kids over the top because the glass of water is to the talk.

They've got infections, they've gotta toxins, the microbiome's not working, their mitochondrial dysfunction, have hormonal dysregulation, all the MSIDS factors.

You give them a vaccine when they're already inflamed and it will put them over-the-top but it doesn't mean it was the actual cause of why it happened in the first place and I think because vaccines save lives, I this is where we need to start differentiating why kids are getting sick and we needed a good scientific Just not ideology, science, not just straight ideology.

Exactly. And it's so much, you know, we sometimes use genetics, loads the gun, environment pulls the trigger, but in our very toxic environment, as you said, it is never just one factor in any of our children or adults with chronic illness.

It's a multitude, a total load. of all the infections, toxins, alterations in the gut brain access, mineral, vitamin deficiencies, sleep disorders, all of the things in six points that you start with and then the ten downstream effects that are driving this for that group of children that is susceptible.

It's not going to happen to everybody. We know there are a multitude of people that do very well with certain triggers, including vaccines, but it's that total load theory that you so eloquently describe.

And a good friend of mine, Patricia Lemmer, who actually works for the Foundation for Children's Health Defense and has written books for him, she has a great book on total load also.

I just got her book and looked at it. And it's exactly that. You know, I learned it from Sherry Rogers. How far back you go, but you've been here. Oh, you remember her?

She was like the first doctor I ever read in functional medicine about total loads. It's like with William Ray. Thank God I got to meet William. some of the environmental conferences.

What a great guy. He's such a pioneer. Total load makes so sense. And yet, unless you've been doing functional medicine like we've doing, the regular doctors out there, you're just not thinking about it.

I think the time is coming. We're going to see a revolution in medicine where, because people are fed up with healthcare and the results that they're getting and these epidemics of Alzheimer's and Lyme disease and pan-span, it's time that we start looking at this from another lens.

I'm hoping I will have a voice in the healthcare dialogue when any chronic illness comes out. I hope so, I really do. And I want to go back to something you talked about because I think this is all so fascinating and not talked enough, which are the microplastics, the plasticizers.

You mentioned very briefly the found in carotid arteries of people with dementia or strokes, etc. Can you talk about that a little bit more and its effect on our health?

You know, it's a really, really big problem. So I have a whole huge section on the book about environmental toxins and especially microplastics. And for those of you who have not really followed the medical literature, the common knowledge is you have about enough plastic in your brain to make about a spoon at this point.

It's like 5% of most people's brains now. The brain is fat, but it can compose the plastic. That's how much micro-plastic we're getting in. Now, why is that a problem?

These microplastics are carriers, right? They're vectors and they're carrying PCBs and dioxins and plastics and all of these different chemicals that are kind of hitching a ride.

They are hitchhikers with these micro-plastic. So they are getting into these places in the body that have been damaged. And they basically at this point they showing at the brain, the carotid arteries, heart, effects on heart attacks, they finding heart attack rates when you have these levels of micro plastic much higher within several years.

It's affecting every organ of the bodies. So, unfortunately, it's the same thing even with fatty liver, which is one third of the world's population. They're now linking this thing to PCBs and a lot of these environmental toxins.

So basically, what we have done in our kitchen is we've gotten rid of all the plastic cutting boards and the things that it is all glass right now that we put it in.

Basically, I don't drink out of bottled water. We have a water filtration system that ionizes and actually puts a little nitrogen in the water. We do our best basically to limit the plastic exposure, but even with fish, I mean, i would eat fish six days a week if I could eat it.

The problem is the larger fish they're all accumulating the plastics in ocean apart from the heavy metals that everyone knows about. So these microplastics, the problem, is that they are causing inflammation in arteries and in all the different parts of the body, They're called EDCs, endocrine disrupting chemicals.

So when women have young puberty at eight years old, right?

Lyme Questionnaire and Bartonella Clues

And sometimes the testicles don't come down and other things are happening to men or the sperm counts are two thirds what they were from 50 years ago.

This is from all these chemicals and plastics that are getting into the body, which is why, by the way, women are going for IVF and having problems with fertility.

In fact, there was just this thing I saw on YouTube about this detox experiment. I think they put it on Netflix with these couples that couldn't get pregnant with keeping plastics out of the diet to see what would happen.

It's becoming a really big problem because you get these phyto, these estrogens in your body and it's throwing everything off. The breast cancer rates go up, the sperm counts go down, it inflames different parts of your arteries in you brain.

while bringing in all these other carcinogenic toxic chemicals, which also, by the way, have been associated with Alzheimer's and neuroinflammation. So we're dealing with a big problem where, as we said, the six rivers of inflammation, infections and toxins.

are at the top of the list. And by the way, these same microplastics and chemicals are throwing off the microbiome of your gut. It's not just that you're not eating enough fiber.

I mean, I put a teaspoon of organic flax seed, black seed and hemp seed in my yogurt every morning and I have a fiber every day to support my short chain fatty acid bacteria because these chemicals that cannot avoid this hundreds to thousands getting in every they're affecting your microbiomes Increase in the inflammation making the leaky gut as you said like leek leeki gut leaki brain It's the same thing.

So it's kind of a round robin where these chemicals are coming in affecting every system in The body so you got to really really be careful. I do a lot of detox.

We have an infrared sauna Which I should use a little bit more frequently But I'm taking things like glutathione to get fast soluble toxins out of the body.

I am blocking pathways like NRF2 with curcumin, broccoli seed extract. Interestingly enough, some of these supplements like broccoli seeds, sulforaphane, glucosinolate has helped the autistic population.

Oh, absolutely. I mean, there's some interesting studies on all of this by blocking inflammation and helping with detoxification pathways. And all this, by the way, is in this new book.

Oh I didn't tell you this. There are 16 major inflammatory pathways underlying the 16 MSIDS factors and I have in the book piece by piece how you use diet and nutrition with what I call nutraceuticals like NAC glutathione.

How you can block and manipulate this, what some people call biohacking. I basically discuss how do you do this to help improve your health. It was fascinating because I didn't know that all of these inflammatory pathways, like you could have six inflammatory path ways underlying a Lyme infection, but three others underlying the Bartonella or environmental toxins.

You gotta figure out where the inflammation's coming from, because as we talked about early on, pans-pandas, autism, ADHD, Alzheimer's, it's inflammation in the brain.

You just have to figure where inflammation is coming. Right, right. And, you know, we've talked about one in seven people have Borrelia, the majority of whom have Bartonella.

The rates of chronic illness, these microplastics, all the offenders of the infections and the toxicants. But I do want to, again, encourage everybody to buy the book because it's not just for adults.

It's just not about ending chronic illnesses for all of our families and our children. But there are simple things that can be done. You know, yes, we can work with Dr.

Horowitz and those of us who do it and using low dose Dapsone, but also the natural biohacking. The getting more sleep, the getting exercise, decreasing screen time and plastics, treating the gut as the first brain and really doing the things like you're talking about that aren't that expensive in helping our guts to heal.

Would you agree with all of that natural biohacking too? Absolutely. Did you describe that in your book? Yeah. In every chapter of the book, I discuss exercise, sleep, diet.

I discussed all the natural ways to do it because without the proper diet, without sleep without exercise those three pillars, it doesn't matter what else you're going to with everything else.

If I miss one night of sleep I can already tell my brain's not functioning at the usual 10 times the normal rate of how I function with this. No, absolutely, extremely important that people realize this Look, when I was young and I would get infections, my stepfather was a surgeon.

He used to take me into the hospital and i would go into The OR and scrub up when i was like 10, 11 years old doing surgeries with him, which is why, by the way, I said to myself I will never become a Surgeon.

But but I look you know, I get antibiotics when I was sick and I had asthma when i was a kid, right? Nobody said to me take probiotics eat yogurt support your microbiome.

I got candida later on I have to avoid sugar like the flay now Ultimately, it's good for me because my body doesn't feel good with it I feel great off sugar, but god forbid you give me a dessert.

i'll feel it for two days after So the proper diet, exercise, and sleep regimen, absolutely those are the three most important pillars. But I have some suggestions in the book about even a few basic nutritional supplements, knowing that you have hundreds to thousands of toxins getting in.

Blocking that first switch NF-kappa-B with NAC, alpha-lipoic acid, glutathione, even if you're not going to take a gazillion things with a little bit of microbiome support with some fiber, there's some really simple things you could do.

And I go through that in the book also so that people who don't want to spend a lot of money and still, again, biohack their health, they can do it, but still get some of the benefits of knowing, understanding where the inflammation is coming from at this point.

Right. Dr. Horowitz, you know, and I could talk for hours and, I know we will be, but I want to help people know how they can find you. You know one, You are mentoring other practitioners, which is amazing.

How might somebody find You to do that? So I have a website called cangetbetter.com. And under can get better. com, I do have consultation service. So what I'm doing now is I no longer prescribing myself, but now I've switched from 41 years in the trenches, seeing 13,000 people to now.

training doctors where I hold their hands and work with them with really complex patients to teach them how to do Dapsone.

Microplastics, Detox, and Environmental Toxins

To teach him how use the MSIDS model. Just last week I got calls from Bulgaria, Romania, Australia. I mean, it's actually fascinating and it is kind of cool because I'm connecting with people across the world and its nice.

The thing that brings me the greatest joy is making people feel better and that bring me happiness. It's a little codependent but it how I am wired. Exactly.

So it educates. And I also, you know, I find it fascinating to talk to people in other areas of the world because also learning, for instance, what their soil may be depleted in, in Australia, they're much more depleting in selenium than we are in some areas in the United States and learning those things and understanding the differences in different countries, not just in The United State is fascinating.

I mean, You and I being detectives, we could share that, both learning and helping. Just such great goals. Yeah, so for people interested just in learning more about it, it can get better.

I would just suggest if you are interested in a consult, just know I'm not looking for business. I have put all of my research in open access and even medical detective sub stacks.

You never have to contact me. Your doctor can read the literature and do it and ask me quick questions and not have access to the service. My wife would like to have a life with me at this stage.

So believe me, I'm not looking for work, but I am there if you need my help. And to learn more about Ending Chronic Illness, you just go on endingchronicillness.com and you can learn about the book.

The book will be released October 13th and I'll be doing book tours and podcasts like with yourself. I didn't think at this stage of my life I'd be so excited about new things in medicine to help people.

But what I discovered in this book and in his new Alzheimer's article, it feels like a new lease on life. Like, oh my God, have got new thing to people!

How exciting, it's great. It really is. And also just that whole model that one of your mentors gave you, that exchanging yourself with others, because you're doing that on a daily basis, you know, hopefully some with your wife, but also, with all of us in the world, and I for one so appreciate that.

Any last words of hope, experience, wisdom you want to leave some of the families with as we talk about all of this? Absolutely. I usually like to end with a message of Hope and I'm talking true hope.

Not talking hope like you should have hope I am talking Hope based on my clinical experience of having seen 13,000 of these sickest patients. The most, by the way, I'd ever seen was 100 doctors who went to 100 before seeing me.

I have seen diseases that people said could not be cured, could be reversed, and I'm not saying it will be necessarily your case, but I can tell you by applying the 16-point MSIDS model and going after these infections and detoxing the mold and the heavy metals and environmental toxins and addressing your microbiome, and the gut and getting enough sleep and exercise and looking at vitamin mineral deficiencies and dealing with mitochondrial dysfunction, balancing the hormones, doing all the things you're supposed to do on the 16 MCIDS model.

And you'll see the stories in my book where whether it was ADHD or Alzheimer's the best, how we reversed and helped heal these conditions. I know for a fact that healing is possible in many ways when people said it is not, including cancer and many different conditions.

My advice to you is never, ever, give up. I think it's what Churchill said in World War II, but it true in this field. If you keep looking for answers, you may find that some of this new cutting edge research that Nancy and I have been doing over the years you may find some of the answers you're looking for, and a lot of them, hopefully, you will find in here.

And if you do, please contact me and let me know, because people contact my all the time who I've never met telling me their stories of healing and thanking me.

It makes me feel so good knowing I helped someone that I remember met on a different part of world. So, yeah, I'm really hopeful, both for the chronic disease epidemics that there's a new model of The 16 Point and then for as I said, Alzheimer's with this new study coming out that If 25% are due to Lyme, we may have a way of addressing dementia, and maybe it's even more.

We don't even know yet until people apply the MEMSIDS model to things like every patient that comes in with PANS, PANDAS and autism and ADHD and L. we won't know how many have these abnormalities.

This is why I'm now looking for a randomized multicenter placebo trial. And I am trying to work to get one done in the years ahead because that's the gold standard.

That's what we need in medicine. And that's also one of my future goals to prove this to the world. Yeah. Well, I, for one, am very grateful.

Hope, Resources, and Closing Remarks

You have helped many of My patients, and I know many, many multitudes more. I can't wait to read the book, Ending Chronic Illness. As Dr. Horowitz said, go to The Substack.

Go to website. There is hope, real hope for all of us. My pleasure, Nancy, and thank you again for all the great work you've been doing over the years.

It's great connecting with you. You too. And we'll see you next time on Demystifying Pan's Pandas. That's it for today's episode of Demystifying Pan's Pandas.

I hope you're walking away with insights, tools, and hope to help you and your child on this journey. If you found todays conversation valuable, be sure to subscribe so you never miss an episode.

Share this podcast with anyone who might need it. It could be the lifeline they're searching for. And if you have a moment, leaving a review helps us reach even more families who deserve answers.

Also, for more information, training, and community, check out our website, drohara.com and join our annual membership. And remember, every step forward, no matter how small, brings us closer to healing and understanding.

Until next time, be present, Be hopeful, And we look forward to seeing you next on Demystifying Pan's Pandas.