Toxic Burden Explained: How Environmental Toxins Drive Aging & Disease Transcript

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Introduction to the Functional Edge

anything that's chronic inflammatory responds by getting the toxins out and reducing your chronic inflammation. You know, Julie and I were always taught as doctors that inflammation comes from diet, lifestyle, and toxins.

I'm here to tell you, it's the toxin's in the diet. It's to toxins in a lifestyle. And it is the toxins in toxins, is that toxins that are really driving this chronic information.

We didn't have this level of chronic infection 50 years ago. Right. And it's very easy to surmise that there's a causative link between the amount and types of toxins you have over duration and your level of chronic inflammation.

Welcome to the Functional Edge. I'm Dr. Julia Ward and this is where science meets real-world strategies for living healthier, sharper, and stronger. From uncovering hidden environmental toxins to unlocking peak performance and mental clarity, we cover it all.

Ready to take control of your health and thrive? Let's dive in. Okay, hello and welcome to the Functional Edge podcast. Today we're honored to welcome Dr.

Paul Savage to this show. Dr Savage is the founder and chief medical officer of MD Lifespan. He's a nationally recognized leader in personalized medicine, longevity, and toxin reduction.

He has been at the forefront of innovative approaches to health optimization, helping patients better understand the role that toxic burden, inflammation, and advanced regenerative therapies can play in long-term wellness.

Defining Toxic Burden and Environmental Exposure

In this episode, we're going to be exploring the growing role of therapeutic plasma exchange, toxic-burden and longevity medicine in optimizing health and preventing chronic disease.

We'll discuss how environmental toxins, inflammation, and metabolic dysfunction may contribute to aging and illness and how emerging therapies may help support vitality and performance as we age.

So stay tuned for an engaging conversation where we'll dive into the science behind detoxification and longevity, challenge common misconceptions about aging in wellness, And discuss cutting-edge strategies for helping patients live healthier, longer lives.

This episode promises to be both fascinating and empowering as you continue on your journey towards optimal health. So, thank you so much for being here today.

Thanks, Julie. I really appreciate the opportunity. Awesome. You've spoken a lot about toxic burden as a major driver of chronic disease. How do you define toxic burdens in a way that's clinically useful for practitioners?

That's a great question. I mean, and it's one of those great questions because although even as practitioners and patients and practitioners, we all know that toxins are in the universe and our environment.

And we're all become very aware because of all the articles in The Paper almost every week now, different things that are linking the toxins with chronic diseases, as well as we see more and more comments in media about the levels of toxins of different various types and forms becoming more more prevalent in our environment.

So when you talk about toxic burden, you really got to step back a minute first and look at what we mean by environmental toxins. I think there's some confusion as to what that may actually include.

But you know, a toxin, or in the medical terms it's called a toxicant, is a chemical that is not natural to the environment, and it's usually a byproduct of industry, of combustion, or production.

And so people are very shocked when they find that the environmental working group in 2023, as they monitor the amount of toxins in the United States, it's increasing by 100 million tons, say that again, 100,000,00 tons per year.

That's what the about was in 2023. And by most recent calculation, that amount is increasing between 10 and 15% per-year. So that's just a lot. Toxins have always been in the human environment.

I mean, we've had natural toxins, right? We've have poisons, plants, different things that we have been exposed to, and biologically we learned how to adapt to those toxins.

We would be exposed the toxins and it wasn't an everyday event, it was actually relatively uncommon, but we get exposed that toxins Our body knows how to deal with that toxin, it knows to break down that toxins, and it know how get rid of that toxic.

So we have a very robust genetic code for detoxification. That's without a question, that we've always had. system hasn't been prepared for is all these artificial toxins that we've invented.

The difference is that our body hasn' t evolved the processes biochemically to break them down. So there's a lot of varying degrees of toxins we talk about when we're talking about the current environmental toxins in the United States.

And we have to discuss a And there's mold toxins called mycotoxins. Now they've been around for a long time, but they're even more prevalent today because of the way we process and package our grains.

The fact that we live in houses instead of caves, so that that's old groves. So they become a bigger part of equation too, All these environmental toxins, the plastics, pesticides, herbicides, chemicals that make plastics soft called phthalates.

And then there's all these forever chemicals like the PFAS and the PCBs. The list goes on and on. It's a significant amount of different categories. All of these toxins are a lot of the ones that I just mentioned.

Our body isn't really properly prepared to deal with. Back in time to the 1960s, when we had some air pollution and this I think everybody or you're old enough like me you remember the crying Indian commercial where he's looking at the river filled with pollutants and toxins and we knew back then that it was going to be a problem but we've seen these toxins not only increase in number different types but in quantity of each of those different Yeah, yeah.

So throughout all those years, that's when we talk about the toxic burden, we're talking about, the number of chemicals in the human body. It's not just the numbers of chemical that have expanded, The amount of each chemical has increased as well.

So 30 years ago when we had people coming in and we were helping them detox, it really wasn't much of an effort to help them clean up their diet, make sure they get exercise to move around because that helps liberate the toxins.

You know, there was detoxification with sweating, like either a sauna or just exercise and sweating with detox. Making sure you get enough fiber so it's absorbing all the toxin as it is going through your gut.

But these toxins that we've been exposed to now in the last 40 years have become much more complicated, and they don't come out with these different ways.

So, previously, even as early as 2015 and before, when we had toxic people, we could get all the toxins down that, because not all toxins are removable, there's that.

nexus of the forever chemicals that once they're in you they bioaccumulate, they just continue to gather in your system and you can't get rid of them.

But back in the day when if we get the toxins down that we could, the total toxic burden would be reduced enough that people would feel better and the biochemistry would come back online.

The problem as I see it is in the last 15 years, the amount of chemicals that don't get processed by the body, them out that we can't mobilize, that can remove, has become so significant that even if we get down the ones we still can get it down with the mold and heavy metals, some of the phenols, and some other volatile chemicals, there's this nexus, this mass of toxins in each person that's so we haven't been able to remove it.

Matter of fact, it was Stephen Hawking who said back in 2016 that pollution and our stupidity to it is the only existential threat to mankind. And he saw it correctly.

Yeah. And here we are today. Here we, are here. We are. Absolutely. I think that's important because it does seem like we're dealing with more and more toxic burden today than we were in the past.

That is without a question. Now, I've been in health and wellness space for 30 years and I have been doing toxin testing on 30 year.s I can tell you just from a clinician point of view, and i've actually built 127 clinics in total, and I had the software that was measuring 6 million people over 10 years.

Testing Toxic Load and Interpreting Results

So I'm the guy to ask about what the data looked like because my background is biophysics, so I would always be looking at the date. There is without a question that the amount of toxins in each individual, every individual in the United States has toxins.

That's without question. It's just a matter of how much, of what kind, for how long, what can you do or not do to lighten your load or get rid of them.

Yeah. So when you evaluate a patient, how do you begin to determine whether toxins are playing a primary role in their symptoms? That's a great question.

And the answer is, toxins play a role and everything. It's just to what degree, right? I mean, the whole body is multivariant. And when you're dealing with patients, even the healthy patients who want to get healthier and stay healthy, or the patients are ill who wanted to healthy so they can also get healthier and say healthy.

So there's this whole spectrum of patients that you see. The answer is everybody's exposed to toxins and everybody is carrying amount of a burden. It's about the individual susceptibility.

and it's your genetic code and your epigenomics that the toxins are playing against. So we're looking at not only the amount of toxins that you're carrying in your body, but we are looking what it is doing to your immune system, to you brain, and to inflammation.

And then finally we look at what is it doing on a symptomatic type of spectrum. It's not just looking one factor, you have to look all those factors combined.

Yeah, yeah. Can you walk us through at a physiological level what types of substances are being removed during the therapeutic plasma exchange and then why the body may struggle to eliminate these on their own?

That's what we were talking about. You know, there are various types different toxins and even within the toxins group they all act to some degree a little bit different.

Metal like mercury doesn't work the same way as aluminum. They both have bad things that happen to you and it's a matter of how much you got and So the body has mechanisms, or we've had also abilities to help the bodies remove these toxins.

And those would be things like heavy metals, mycotoxins, the fragrance chemicals, all these chemicals that float around in the air around us, what we call volatile organic chemicals or POPs as well, persistent organic pollutants.

Those have always been able to be identified to, be minimized in your environment, but we've also had the ability to use things like binders, like sauna, infrared sauna like chelators to help them get out.

But as I mentioned, a lot of these newer chemicals that were being exposed to the industrial chemicals, the pesticides, its plastics, They come with a different chemical structure that the body has never genetically developed a method of breaking them down because they can come into the bodies through the respiratory tract, through your skin, though your digestion system, but then trying to get them out of the bodys through pathways like the skin the liver the kidney.

We just don't have the biochemistry which doesn't so they just accumulate now these toxins aren't benign that's why we call them toxins right they do damage so the body tries to do things in your system to hide them or to keep them out of the active population as it were and the two main methods it does this is by either hiding them in cells inside cells And very often your body uses fat cells because there's a lot of these toxins are what we call lipophilic or they like to exist around fat.

So your buddy just hides them in fat cell and locks the door to get them out of circulation. Or if they're not able to be hidden in the fat, so the body wraps proteins around them and the plasma in body.

And that's what they call sequestration so that it neutralizes them by covering them so much protein. It's like wrapping them into a big ball of yarn.

so that they can't interact with anything else in the body. Okay. And what is your favorite testing for checking to see toxic burden in your body? There are many good toxin testing companies out there.

I'm a biophysicist, so I tell people, as long as you understand what it's testing and what's not testing, you're good to go. But when we started 15 years ago, really starting to notice the amount of toxins that people were carrying, we needed to look for a test that had a lot of different categories of tests.

There's companies out there that test you for mold, and there's company out that tests you heavy metals, there are companies that can test for PFAS, but we looked for company that could do a big broader spectrum of all of those.

And so the one that I like the best is called Vibrant America, and it's called the Total Toxic Burden, plus we add on an anon called PFAS. So it is giving us about 109 different toxins from 12 different categories, And it has selected toxins in each one.

But Julia, that test only measures about 100 different toxins. out of an environment of 100,000 toxins. So one of the things that I always tell patients, don't get too absorbed into any specific one toxin on a toxintest because there's 999,999, or you know, a lot more than, sorry, 99,999 more toxins out there.

Really when you want to do a toxic test, you really do want kind of look at all these different categories because where you have one, usually have many.

So, I mean, mold, if you have a lot of mold it's probably because you had multiple sources of mole. If you've have lot a pesticides, it is probably, because, you're out in an area that has a lotta different pesticides.

So they do kinda running packs together, so we don't see just one toxin in one category really high and all the other ones negative. That's typically not what we see.

Yeah, okay. The other thing is to understand that you can do blood testing, you could do hair testing you, can you do urine testing. They're all valid you just have to understands which chemicals you test and which chemical you cant test.

And how you interpret those results is important as well because how interpret the blood values is different than how to interpret urine values. Yeah, yeah, that makes sense.

I think I've always been a little hesitant to test some of these more esoteric kind of toxins like PFAS and some these other chemicals just because I don't have a specific way, I mean now except for tissue plasma exchange, but there's not a great way of getting rid of those toxins.

Oh, that's exactly the problem. I mean, with the last company that I built, which was 25 centers dealing on people who had chronically ill. So it was the people with mold, toxicities, and Lyme, autoimmune diseases, cancer, all these complicated disease states that we were treating.

And we would do these significant levels of toxin testing to see where they are. But the vast majority of them before, at that time when I had those clinics, we knew we couldn't get them out, but we wanted to know them because we what the total toxic burden was because if you just test a mold on a patient who's very sick, but what they have is a lot of pesticides and plastics, even though you can't get them out, it does help you formulate where you need to understand the five basics of health, which are exercise, nutrition, sleep, stress management, and detox.

The problem with detox has become such a significant problem in certain patients that are susceptible. Like you said, the difficulty was many of them were not able to be removed, but I needed to know them to because it is playing a part.

How big of a party is it playing in this overall patient's picture? Because if I had someone who was very sick and I only tested the mold and they had a lot of mold, and this is what we were seeing, we would get the more levels down and the people weren't getting better anymore.

Yeah. It wasn't because the molds weren't playing a part, it was because there was all these other toxins playing the bigger part. Got it. That's why it's important to know the whole different spectrum or at least get an idea of or gestalt of how toxic is this person.

Now the one thing about though with testing previously and treating previously with things like the PFAS and the plastics is that even if you couldn't get them out, if they had a lot, you could do things to inform the patient on how to limit their exposure to those toxins because the rule number one of detox is don't put them in.

Yeah, yeah, absolutely. So in my practice, we focus a lot on microvascular health and the glycocalyx. Have you observed any changes at the level of the endothelium or the microcirculation when toxic burden is reduced?

How Plasma Exchange Removes Toxins

Yes, significantly, actually. So the quick story is I had all these clinics and I saw that the toxic burdens were becoming so overwhelming. And I'm one of those passionate doctors that people who we were treating at that time were very sick, had chronic illnesses.

If I can look them in the face and said, I think I could help you and get you better. I need that part to be a doctor, right? But I became doubtful that I would be able to do so because there were so many of these toxins and so may of this people that a country mood.

that I did believe Stephen Hawking's quote was true, fatally true is I don't think I can help you anymore and not to the degree that we did previously.

And then I retired and I moved to another country that was much cleaner than the United States. About a month

later, I was reading a paper on plasma exchange on how it changed a lot of biomarkers in the patients that they did it and the inflammation came down, the oxidative stressors came, down the actual data factors came out.

The immune system went out, that telomeres which are the end of the DNA got longer and I was looking at the results and realized this is what they're doing.

They're removing the toxins which made complete sense when you understood what plasma exchange is. Yeah, yeah. Well, for clinicians who are using other detox-focused therapies, how would you describe the role of plasma exchange alongside approaches like eBoo or IV chelation?

Sure. So there's a big spectrum we talked about, about how much people are toxic and what susceptibility they have. The vast majority of people don't need to do plasma exchange.

The best majority patients do need clean up their environment so that they can minimize their toxic exposure. That's majority the patients can be treated with infrared saunas, possibly binders, but always cleaning up the food and cleaning out the water.

But there are this group of patients that even when you do that, they're not getting better and they so have a significant load. When we put this all together and we started treating patients on it, what we start in seeing is a significantly drop in the inflammation and oxidation.

The oxidative force, I could argue, is more significant force on the cardiovascular system than inflammation because your listeners may not know, but oxidation is something that actually sets something on fire, it burns.

That's what oxidation is. So an inflammation is heat that is generated usually by your body and the cytokines to generate a response from the immune system.

Oxidation always causes inflammation because when you burn you have to heal, you heal with inflammation. But inflammation doesn't always cause oxidation, but both of those two forces working on the endocardial wall and inter arterial walls is very damaging.

So that's why a lot of the things that we do in cardiovascular health is about getting the inflammation down and getting oxidation down. But what we're really doing in many of these cases is we are just giving people anti-inflammatories and antioxidants to neutralize the effect that has already gone off.

you're not really taking care of the source code, which is the toxins. Once we remove the toxins, the plans will change and we need to understand we're now just removing a toxin.

For every toxine that we've measured over the last three years, they all come down significantly. It's not a matter of if. It's just a matter of how many plasma exchange do you have to do this to get that level down because plasma change is a mechanical dilutional process.

That means that it doesn't depend on the patient at all. When you take the blood out and you separate the solid part which is the cells from the liquid part is plasma, and then you throw the plasma away because the plasmas carry everything.

good, bad, and ugly. It carries nutrients, it carries minerals, its carries hormones, carries medications, but it also carries toxins and inflammation and oxidation.

So when you're throwing your plasma away, you are literally stripping the body of everything. But the beautiful thing about the bodies is within a couple days you make new fresh plasma that doesn't have toxins in it.

So you don't get the inflammation from it. So, you're diluting out the rest of the body. What we discovered three years ago is the timing of that plasma change is critically important.

Because many doctors have historically done plasma exchange as multiple sessions, like every day for a week or every other day, for two weeks. And what we found is a lot of toxins do come out of deep tissues back into the plasma within a day or two, but the plastics, the PFAs, and the microtoxins, they take three weeks and a half before they equilibrate with the plasma.

So if you're doing six plasma exchanges in two weeks, you are getting the first ones taking out toxins, then the next ones are taking some of the heavy metals and phenols, But you're not getting to the real forever chemicals, the really toxic burden, to about three and a half weeks is why you really need to wait a month in between those exchanges to get the maximum removal process.

And then you just keep doing that repeatedly every month until the toxin levels drop. It's an oil change for the humans is what it is. Okay, yeah. How often do you repeat that toxic-burden test?

So initially, when we started doing this, we took patients and we measured their toxins on the front side, and then we measure the toxin test after every TPE because we didn't know yet how many TPS it would take to get down certain chemicals.

And what we found is three to five TPs did the vast majority of the patients very well. You could pretty much determine three depending on how the patient's doing.

If the patient has mild symptoms, if they're not overly ill, three usually is enough. And if their toxic load isn't significant, because some people have a big load, but they have DNA that can handle it, that they want to get the toxin levels down, then they would need five.

So typically it's a matter of looking at how many toxins as a quantitative estimate that to have and what their state of health was. Okay. Yeah. Are there certain patient populations or conditions where you've seen particularly strong responses to plasma exchange?

Great question. And the answer is we've see responses on all various types of chronic diseases. Anything that's chronic inflammatory responds by getting the toxins out and reducing your chronic inflammation.

You know, Julie and I were always taught as doctors that inflammation comes from diet, lifestyle, and toxins. I'm here to tell you it's the toxins in the diet.

It's to toxins and the lifestyle. And it is the toxins and to the toxins. Is the toxic that are really driving this chronic inflammation. We didn't have this level of chronic information 50 years ago.

Right. And it's very easy to surmise that there's a causative link between the amount and types of toxins you have over duration and your level of chronic inflammation.

But when we start applying this to different patients, we see a varying response, especially for the patients that have been sick for a long time. So you've got to understand these toxins that people aggregate during their lifetime typically where you start feeling it first isn't any disease state, it's just these vague symptoms.

You have these mild brain fog, you have this mild fatigue. If you had symptoms in our rashes that occur, they're very nonspecific type symptoms, but as that disease progresses, patients get more severely sick, severely fatigued, and then they start showing evidence of tissue damage, kidney damage heart damage.

or the brain starts having issues like, for example, we know that pesticides cause Parkinson's. We know plastics are found in the carotid arteries. So these things are what accumulate over time.

So what I always tell people is, when you remove the toxins and you removed the inflammation, you turn off the process, but the damage that has been done may or may not be reversible.

But the certain thing is for true is if you don't turn of the processes, the damages is going to continue. Yeah. So

kind of on the opposite side of that question, like, are there patients who don't respond as expected?

And, you know, what do you think is going on or what's contributing to that?

Who Benefits Most from Plasma Exchange

Well, the patients that do really well, just because a lot of my time was spent with these people who are chronically ill. the people with the mold toxicities.

They're also called fibromyalgia, they're called chronic fatigue, mass cell activation syndromes, hypersensitives, SIRS. There's all these names about these people who are not doing well and their immune system is suppressed but erratic and confused and then they have autoantibodies and you start seeing all of these autoimmune diseases.

But those patients do really well. I've seen significant improvement in their symptomatology. Matter of fact, one of the things we do on patients is measure a fatigue score and a depression score over time.

Not only do we measure the immune system and inflammation, but we also measure that toxins and neural cognitive tests to tell us how well the brain is doing.

We see significant improvements in people with cognitive issues, with brain fog. with people that have early Alzheimer's, but we knew plasma exchange had some benefit for Alzheimer as early back as 2020 with the ANBAR study.

So I'm very excited to be talking to people who have these chronic illnesses, who've tried everything and done everything, because this process seems to alleviate the condition and reduce the amount of inflammation.

But what I always tell the patients, this isn't the end of being sick. This is just the beginning of getting better. But the conditions that would be more problematic is the condition that are already set in a tissue change that's not reversible.

So once you get a cancer, taking the toxins out may limit your, you know, if you, get cancer and we get rid of it, become cancer free, then making sure you don't have toxics load inside your body that could precipitate another cancer may have benefits.

but also patients who have cognitive neurodegenerative problems like Parkinson's or ALS. The difference between cognitive issues in Alzheimer's and Parkinson and ALs on a very broad spectrum is in cognitive function AL you have confused neurons and in Parkinson you had dead neurons.

So in that case, those neurons have already sustained permanent damage. And removing the toxins at that point doesn't necessarily improve their condition.

I gotcha. Yeah, yeah. Okay. It's kind of the same thing with, we see people with heart disease. We've been able to get their toxin levels down, their oxidation come down.

In some patients we're even seeing some regression of their pack arterial volume by about 15%. But the damaged heart that already came from the heart attack isn't going to benefit from removing the thing.

So people are like, could you make my heart my heart doesn't function well because the heart attack, remove toxins, will that make it better? We don't know, but I would have serious doubts that that would provide any budget.

Right, right. I got you. Okay. So how do you determine when a patient is ready for a more advanced intervention like plasma exchange? I don't know if I'd call that advanced interventions.

Plasma exchange has been around for 50 years. It's been pretty standardized in medicine. And it's a relatively safe procedure done on the right patient in the setting with trained personnel who know how to do this.

But I do have a little bit of objection with a lot of these doctors buying plasma change and putting it in their office. They might do one or two a month.

You really don't want to do that because you really need to understand the mechanics and how it affects all of these various different people. But you want me to restate your question one more time?

So basically, how do you determine, okay, this patient's a good candidate for it? Is it based completely on the toxic burden that you determined? A lot of the times, it depends on what the patient is coming to see us for.

So if we have a patient that's healthy, has heard about plasma change, may change their biomarkers of aging, and may help promote longevity. And again, these things are yet to be proven.

There is evidence that it does change inflammation, oxidation, immune system, telomeres. but those people wish to do it to better their health. It is a very safe procedure done by the right people.

And so I have no problem with offering that to them, but just with the understanding of what we do know and the papers we publish is we can reduce the toxin.

We can reduce inflammation. We should reduce oxidation. To a good degree, make the immune system more robust than it was before. But is that going to make you healthier and longevity?

Common sense says yes, but we still have to do that kind of objective data. On the other side, we get patients who come to see us because they've been sick for so long, and they basically run out of options.

They've done the chelation, they'd done ozone, the ebu, all these things, but they're not getting better because all of those things have one thing in common.

Plasma exchange is the only thing that I've ever seen, having done detox with patients for 30 years, that removes every toxin that we've measured, goes down substantially.

It's not a matter of if, it's just a manner of how many exchanges, how may dilutions do we have to do until those toxins levels are low enough. Yeah. Okay.

That makes sense. So what do you think about the relationship between toxic load and nervous system regulation? Do you find that one tends to precede the other or do they develop together?

Well, I think like everything else in medicine, it's multivariant in many different cases. Now, one of the things I do want to add is I look at living toxins like viruses and Lyme.

I looked at them as living The body treats it the same way as a chemical. It attacks it. And it just attacks with the immune system, with its antibodies, the mass cells.

So the body doesn't really know if it's alive or dead. The immune systems doesn´t know that. They just know it´s not supposed to be there. That it is a bad player.

You have a lot of these patients that come in who have infections and toxins and that's a pretty common thing that we see together. So how do you know when the patient needs this?

It's a matter of just evaluating what their toxin load is, what the system looks like, What they've been through, and what they patient is able to do.

Yeah. And how does this generally work on if somebody has an active like Lyme infection? Does this sort of like kind of subside the, you now, if they're having a flare or something, does it kind to help reduce that?

I would always be cautious with patients doing plasma change during a flair. because their body's already keyed

up. And when you start removing toxins, the change in the metabolism, to change the nutrients, let me back up the boat here a little bit.

When we've taken patients who have chronic Lyme, but they're also toxic from chemicals, and then we done TBE on them, what we see is the Lymititers go down, inflammatory markers go, down toxins go.

Because plasma exchange brings all those things down. Now in our centers, we always give IV and oral nutrient to supply the things that are taken out.

And we only do it every month so that we give them plenty of time to recoup those things. But by the time we're done with the plasma change, We have a system in which the inflammation is minimal, the oxidation is markedly lower, The immune system goes up between 10 and 50% on the lymphocyte.

The Lyme count itself, PCR, are lower because you've removed those. and we set it up for the functional medicine doctor, now go after the Lyme because you've actually got even the playing field for that patient.

Plasma exchange can remove toxins and the toxins won't go up unless you put them back in. The plasma exchange will remove viruses and Lymes, but they do go out because they reproduce.

So there's a difference there is you can get the toxin level down low enough and live in a life that maintains those level of low toxins because you're not putting them back in.

But in the patients with toxic infections, the infections which are also acting like toxins, you have to do something at that point to help do more of a therapeutic process.

And that's where therapies for Lyme and therapy for viruses actually, in our experience, have become much more beneficial. So we always work in conjunction with the functional medicine doctor and traditional doctors as well and basically cleaning up the environment, the microenvironment, leveling the playing field.

Now when we send the patient back to you, you have a patient that is biochemically more intact. Okay. Okay, are there any common misconceptions about plasma exchange that you would like to clarify?

I don't know if there's common misconception, Julie.

Safety, Misconceptions, and Young Blood Therapy Risks

I think really what it is, is there are a lot of people that don' t know what is is and then they hear it. There's a lots of things that people hear that are facts and there is other things are misleading facts or misleading truths as it were.

So I always try to be the cautious one to tell people Plasma change has been around for 50 years, it's a process which mechanically dilutes your blood so you build new plasma and you help all these different things that we're looking for.

It's safe procedure tolerated well by most people. There are things you have to be aware of because as we take everything out you could cause clotting problems, you can cause low blood sugar.

You could cause low blood pressure. You can cause a Hertz reaction if you take too much of the toxins out too fast of these very sick people. So you have to have the experience to know on how to treat these different people, but I think the one thing that people probably, it's a big machine and your blood's coming out and it looks scary, But it is actually done in the right place by the doctor for the people with the correct personnel.

It's an incredibly safe procedure. I mean, we do hundreds of these every month and everybody, to date, and we've been existing for three years, everybody goes home.

I ask not to say that people have low blood sugar or have a low-blood pressure or even pass out because some

people pass it out. And we even had one person that had an allergic to citrate, which is one of the things you use when you put the blood into the machine to keep it from clotting.

It's a natural product, very uncommon for people to have citrate reactions, but our team is very well trained to manage these type of things. And what I can tell you is everybody goes home.

But the fun thing I have to tell is to date, and I find this as a personal thrill, is everybody we've treated feels better. Everybody we treated has been satisfied or highly satisfied with their treatment.

With that said, Julia, though, we do a lot of pre-screening on people to make sure that they're appropriate for an outpatient setting, that this is something that we see progress and improvement on.

And I'm very honest with people when I talk to them. I had a Parkinson's patient earlier, like, can you help make his Parkinson better? I don't think so.

We've not seen that and it's not plasma change. The one thing that patients do need to understand clearly is when you talk about plasma exchange, you can replace the plasma with different fluids.

One fluid is called albumin. Another fluid is called plasma. Now, that's what Brian Johnson did when he took his son's plasma and gave it to himself. He took out his plasma, gave to his dad.

You took your son plasma gave him. That's very dangerous because that transfusion that blood products and there's that you can have 26 percent side effects, which can be very severe, including anaphylaxis.

And you also have death that occur. I tell people as an old doctor, I would never give anybody plasma if it wasn't inside a hospital setting or a surgical setting.

That just isn't worth the risk. But using albumin, that's a very neutral solution that people don't respond to. It's very safe. So when patients are out there, they're seeing any of these health and wellness clinics that are like, we can improve your longevity by giving you other people's plasma, run.

Don't walk. Run. That's bad idea. Yeah, yeah. And I have heard of those treatments of taking plasma from younger people, putting them into older people.

It's called young blood therapy and it has a significant risk associated with it, including death, and that's not a zero number. That's about, clearly, it's one in a thousand people and you don't know who it is going to be that is gonna die from a transfusion match.

Yeah. Being an air doctor, the day at the World's Largest Trauma Center, when I had a trauma patient come in, we'd give them a lot of plasma, right, because they were trauma patients.

By the time I'm getting in the 10th bag of Plasma, I was asking myself, is the trauma going to kill this person or is a plasma going kill his person? When you're talking about plasma exchanges with patients, you are really talking quite a few units of plasmas that you give to these patients each time.

just simply not worth the risk. For an elective procedure to increase your lifespan, why would you put death on the line as one of the outcomes? Yeah, absolutely.

Looking ahead, where do you see the field of detoxification and personalized medicine evolving over the next five to ten years? And I would, you know, I've been in this field for 30 years and I have seen a lot of changes, but the one consistent change that I'd seen over 30 is the toxic level, and it's continuing to increase around the world, including the United States, is continuing increase.

In my mind, there's very little question why the 50-year-olds are getting cancer, why Alzheimer's is occurring at 400% higher frequency in the 30- year-old, and why kids are autistic.

I think there is a significant contribution here to the toxins that we're caring about, caring themselves. One of the things about the autisms and the mom is that we know from the echo study that was published last year that two-year-olds have about as many toxins as their mom has, and three- year-old and four- years- olds.

Future of Detoxification and Personalized Medicine

But the interesting thing is two year olds had more than three year old who had four year older and a level of toxins because the moms of two years old had two more years get toxic before they had their child.

I mean, we're seeing this evolution, at least from my interpretation of it, is that we are really starting to get into problems with reproduction rates going down and the neurodegenerative diseases in children.

increasing, including the horrible cancers, I think there's a significant toxic load. So, since toxins affect your immune system and your inflammation, which affects everything, we're going to continue to see an explosion of these chronic inflammatory diseases.

I personally and professionally believe that toxins are a signficant driver of that. Since plasma change is the first therapy we've ever found in medicine that can significantly lower these levels of chronic toxins, I think that's going to play a role in every aspect of medicine.

Matter of fact, you and I have been in the medical field long enough to realize, we're seeing things happen in medical fields that change the industry.

I can just say, like, when we first invented cephalosporins, a different type of antibiotics 40 years ago, that changed everything. I mean, it just, suddenly all these kids with meningitis stopped dying.

And then we had the CAT scans on the ultrasounds and the MRIs that got invented. We started looking inside the body like we'd never been able to do before.

Then we've had things like the antivirals on how it changed the course of a lot of these viral diseases. We've seen things, like, the clockbusters, or the thrombolytics stop and change heart attacks and stroke.

But we haven't seen that many changes in medicine of that significance. I think toxins are bigger than all of them combined, because toxins literally affect everyone on the planet.

And to a degree that we're putting the toxins in the environment, we are going to get to the spot where everybody will just keep climbing unless we do one of two things or both.

get the environmental toxin levels down, or at least find a better way of getting the toxins out of our body. So modality moving in the future, I think literally everybody, every cardiologist is going to have a plasma exchange center.

I thing every neurologist is gonna have the plasma change center, oncologists, gynecologists obstetrics, rheumatologists. They're all going have AFRISA centers or plasma chain centers because they're going get to toxins level down because it's going to be driving a bigger and bigger part of this chronic inflammatory explosion.

Yeah, I think so. It's really amazing. The interesting thing that we've done that hasn't been done yet with plasma exchange is we wrapped a functional medicine approach around it.

with avoidance therapy and nutrients, and in some cases, regenerative therapies. And we're seeing a significantly better response in patients, which makes completely sense because if the plasma change is removed from the toxins, then the nutrients are helping the biochemistry come back online and the avoidant therapy is keeping the toxin from entering back in.

There's no question at all that when we get the IRB study that we're going to see what we are calling advanced

serial plasma change is much more effective in helping reverse a lot of these disease pathologies or at least help minimize the effect of them than just plasma exchange alone.

Yeah. That sounds like that would definitely work a whole lot better. Yeah. Awesome. Okay. Well, this has been so informative. I really appreciate your time and explaining all this really fascinating stuff.

And I can't wait to try it out myself. Yeah, awesome. Thank you for having me on. This is a conversation. One of the things I do want to let people know is that our website at MD Lifespan, they can come download our book called Avoiding Toxins.

This was written by me and five nationally known toxicologists, a clinical toxicologist, an environmental toxicology, s a mold toxicologies, public health toxicologues, and a nutritional toxic colleges.

And we all got together and wrote a very non-fear-based, very straightforward, how to reduce your toxic exposure in your environment because rule number one applies to everybody on the planet.

Resources, Avoidance Therapy, and Closing Remarks

You need to learn how minimize your exposures. Everybody is walking around saying toxins are everywhere. Why do I care? Because you should, because you can get those exposures down.

And the patients we did three years ago, their levels today are lower than they were three year ago and that's simply by using avoidance therapy. You could avoid a plasma exchange potentially if you start implementing those things for you, your family, and your friends.

Yeah. That's a great, that's wonderful resource. Yeah, thank you. It's the book we put out that is free to the public. We just wanted to help them understand you can address this and it's common sense and straightforward.

But here I am with my filtered water. Here I And I'm patient number one, as I said. I started with 18,000 toxins. We got them down to 6,00, then down the four, and then to two.

And this year, I didn't have any toxins over the 75% range. That's great. We'll definitely put a link to that in the show notes. And also just to remind the listeners that I have also a five-part series where I'm talking about how to reduce your everyday toxic burden.

So that's in our podcast series if you go back. Awesome. Well, thank you, everyone, for joining me on The Functional Edge today. I hope today's episode gave you fresh insights and practical tools to level up your life.

If you found value in what you heard, don't forget to hit the subscribe and share button. Share it with someone who needs it and leave us a review. It's the best way to support our mission of bringing powerful health solutions to more people.

So for more resources, updates, and behind the scenes content, visit drjuliaward.com. And until next time, stay strong, Thank you for joining me on the Functional Edge.

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