



Dr. Jill Carnahan, MD - 00:00

Hey everybody. Welcome to Resiliency Radio, your go to podcast for the most cutting edge insights integrative and functional medicine. I'm your host Dr. Jill and with each episode we dive into the heart of healing and personal transformation. Join me as I interview medical leaders, experts, innovators and all types of professionals. People with information to help you on your path to optimal performance and longevity. Just living your best life. I try to bring information every single week that will help you in your journey. And as you know from listening to my podcast, we interview all kinds and types of people just bringing the best of information for resilience and optimal performance. Today is a special episode with Dr. Paul Savage from MD Lifespan.



Dr. Jill Carnahan, MD - 00:45

I am super excited to introduce him and to tell you more about what he has to offer, but before I do I just want to remind you Number one Flatiron Functional Medicine my clinic in Louisville, Colorado is accepting new patients. Many people don't know that we have two mid levels that are fabulous Fawn who's a physician associate in Hannah, a certified nurse practitioner and they are able to prescribe and treat and they work with me on all the complex chronic cases. I handpicked these two. They're spectacular and we are accepting new patients. So if you're suffering or someone you love and you want to see us in the clinic, just give us a call 303-993-7910 or you can email info@forFlatironFunctionalMedicine.com for more information.



Dr. Jill Carnahan, MD - 01:31

Secondly, if you need products or services looking for treatment for Epstein Barr, small intestinal bacterial overgrowth, mold toxicity or many other things, I have curated products and services for you@drjillhealth.com pop on over to drjilhealth.com get 15 off your first purchase and check out a array of curated products to help you on your way to optimal health there. And don't forget the Dr. Jo Beauty line which is been designed by me to be low toxicity and optimal for performance. Many people say what have you done with your face? Well I actually use these products myself so you can go to Dr. Jillhealth.com for more information on my line of Dr. Jill beauty products. Okay, let me get back to our introduction.




Dr. Jill Carnahan, MD - 02:12

Dr. Paul Savage is a medical doctor, physician, innovator and founder of MD Lifespan where he serves as Chief Medical Officer and leads the development of the patent pending Plasma Exchange protocols aimed at reducing environmental toxins, especially mold and enhancing long term health. With with more than 35 years of clinical experience, Dr. Sav his journey from Emergency medicine to personalized and integrative healthcare inspired his breakthrough in longevity and toxic reduction. After transforming his own health through lifestyle medicine, hormone therapy and regenerative approaches, he has dedicated his career to empowering patients with practical and data driven solutions and addressing chronic inflammation. Join me now as we answer the top most asked questions by patients. Here's Dr. Paul with MD Lifespan.




Dr. Jill Carnahan, MD - 02:57


Dr. Paul Savage, you are a colleague and friend and just one of the people in the world of medicine and innovation that I respect so greatly. And I am so excited about this special episode that we're doing today because we're going to dive into something that I now offer in my office in Denver, Boulder, Colorado area, but all over the US and hopefully someday all over the world. Your company, MD Lifespan, is providing this total plasma exchange. And a lot of people either have never heard of it or they have a lot of questions about what is this, you know, what does it mean?

 Dr. Jill Carnahan, MD - 03:31


So today we've taken from your group of patients and from my patients and website all of the most commonly asked questions about total plasma exchange, what it means and what you need to know if you're trying to make a decision if this is right for you. So stay tuned. I promise you, knowing Paul and me, this is going to be an episode chock full of great information that's really practical. So Paul, one of the frames we just started talking about and then we'll dive right into the questions is Toxic Load is something that I deal with as a mold expert every single day.

 Dr. Jill Carnahan, MD - 04:05

And today's actual title is around mold because I tend to treat the mold toxic, but this involves all toxins and you're going to dive into some of that details of what are the most important toxins that this can help with and why are our traditional detox methods failing us? Why we need something like TPE and the kinds of people who need that. But the one thing I want to mention is the frame we talked about right before you came on and what that is that when we talk about toxic load, it's scary. People all of a sudden realize they're swimming in toxic soup. And I know when I go out there and look stream into the positions you can actually physically feel in the audience this sense of like overwhelm and doom, right?

 Dr. Jill Carnahan, MD - 04:41

Because the truth is this exponential increase in toxins and you and I talked about the free ebook, the free book that you're going to be giving away. So stay tuned for that as well, because one of the toxicologists, one of the world experts in your book talked about this Overwhelm, but then also the fact that we have agency that we can do something about it and that we now have these tools like tpe. So let's dive in. Our first question is perfect frame. That is what is therapeutic plasma exchange? And what, how does it physically remove versus mature? Like what's actually removed from your blood? Give us a little bit of 101 on TPE.

 Dr. Paul Savage - 05:18

Therapeutic plasma exchange is a process that's been around in medicine for over 50 years. I want Avery. This is a old procedure. It's well known. The complications, the process, the benefits, very well documented in the literature. A lot of people don't know about it because it hasn't been the first line therapy of anything. So it's always, you have this problem and this problem, and finally we need to figure out how to solve it. And plasma chains offers some alternatives. So plasma exchange is an interesting thing. It's an actual. Is a mechanical process by which we take your blood out. It goes into a machine. The machine separates your blood into two components. The liquid part that we call plasma, and the cellular part, which is your red cells, your white cells, and your platelets. That's all that goes over here is the cells.



Dr. Paul Savage - 06:12

Everything else is in the plasma. You can think of plasma in the body kind of like a superhighway. It carries everything. It carries your nutrients, your blood sugar, your hormones, it carries toxins, it carries inflammation, it carries antibodies. Everything else besides the cells are in the plasma. So when we separate the two components and we throw the plasma away, we're throwing out the good, the bad, and the ugly all at once. We recombine those cellular products with a human derived albumin liquid, and then we infuse it back into the body. During one exchange, we. We're replacing about two thirds of your plasma with this human donor albumin. Now, this is a very safe procedure. People do have some concerns, I understand that, because the albumin does come from other people's plasma.



Dr. Paul Savage - 07:04

But this is something that again, has been around for a very long time. And the process by which they get the albumin out of other people's plasma is known as electrophoresis, where we pass a current through the plasma and only the albumin comes to the one side and we harvest it, and then it's cleaned, and then it's checked, and then it's packaged and then it's sold. This has been around so long that went through the HIV era with nobody getting HIV or viruses or cancer or anything else. It's just albumin. When you take the albumin and you put it on an MRI machine, the only spike that you have, there's no other spikes, is the albumin itself. So this is very safe product for people to use. There's other people out there that sometimes give other people's plasma as replacement fluid.



Dr. Paul Savage - 07:55

And I just want to make sure your audience realizes, don't do that. That doesn't they? They promoted it. As we're giving you a young man's or young woman's plasma, it's going to be good for you. There's nothing in that plasma that your body can't make. Okay. But there are a lot of reactions that you can have when you get another person's blood products, and those are called transfusion reactions, which is very dangerous and can actually lead to death. But without lbumin, there's very minimal side effects. The real side effects that come from this kind of procedure are. Is usually bruising where the IV came from, or the blood sugar may go a little bit low because we're taking everything out, including your blood sugar or your volume, your blood pressure may go down a little bit.



Dr. Paul Savage - 08:42

That we see that more in people who are on medicines for blood pressure. It doesn't happen very often, or they can actually have a problem with calcium, because when the blood goes through the machine, we have to add a natural chemical called citrate. Citrate grabs your calcium in your plasma or in your blood, and it keeps your blood from clotting while it's in the machine. But we give you back the calcium with the albumin as it's coming back to you. So we don't see that reaction very often. And on a very rare occasion, in three years, after doing thousands of plasma chains, we've only had two people have an actual allergic reaction to the citrate. But I'm an old ER doctor, and there's a lot of different levels of reactions to this. And this kind of reaction.



Dr. Paul Savage - 09:25

You break out in a rash, your blood pressure may go down a little bit, you may get a little sweaty, you may feel a little lightheaded, but we lay you back, we give you some fluids. And the nice thing about this is citrate is very rapidly cleared from the body, so within about 20 minutes, you're doing fine and you go home. In all the time that we've been doing plasma change and all the MBL Lifespan offices, we haven't had a single patient have to go to the hospital or follow up with their doctor. They do very well.



Dr. Jill Carnahan, MD - 09:52

Well, thanks for explaining that. So clearly, because that's exactly. I get a lot of patients who are asking about it and asking questions, and that's the exact thing they're concerned. But the truth is albumin is our universal binder. So this is a wonderful product back. Like, it is the best thing you could possibly do. So.



Dr. Paul Savage - 10:08

Correct. Right. You did a. I mean, when you're looking at toxins and you're trying to get toxins out, albumin acts as the sponge that goes into your body and grabs more toxins by giving you just pure human albumin, which is identical to everybody's. Albumin is absolutely identical. So your body doesn't know it's not yours. It just treats it like albumin and albumin binds all these toxins. So the next time we're ready to do another plasma change, we get even more out.



Dr. Jill Carnahan, MD - 10:35

The next time makes so much sense. Now, I often lecture on total toxic load. And what I talk about is my little way of thinking about it, which is we are getting this tissue load of toxins as we inhale, as we ingest, as we be in the world through our skin, through our respiratory system. And those toxins typically are lipid soluble, which means they go into our tissues. So most people are walking around with a tissue burden of toxic load. Now, there's an equilibrium, and I'll let you talk more about this between the tissue load and the plasma or the serum load. But in my mind, we always are talking about mobilizing those toxins from the tissues into the serum.



Dr. Jill Carnahan, MD - 11:12

And then in my mind, when we're not doing tpe, which is the amazing thing here, that we have this next level of detox, we're just using binders or things to filter that blood and to bring that toxic load out. So we mobilize and then we eliminate. How does TPE differ from that traditional model in the sense of what things are. You take. You said plasma, but is this like, is there immune complexes? Is it metals that are in the blood? Is it mycotoxins in the blood? What are we actually taking out of the blood? What are we filtering? And could we be filtering some of the inflammatory compounds, not just the toxins?



Dr. Paul Savage - 11:49

So the process. That's interesting thing about plasma exchange. Now, you and I have been around the world long enough to remember all the things we used before. Infrared sauna, binders, chelators. I mean, there's a lot of different things that we've used. The problem with those things is you have to give that to a person and. And then that brings the stuff out. So I mean, you give them heat and that and their pores.



Dr. Jill Carnahan, MD - 12:13

So let me really quick clarify, because this is so important. I want people to get what you're saying. Then the mobilization, all of those things that we have in the past, they mobilize out of the tissues into the blood. And I find people often get worse before they get better, because unless you're eliminating. Well, and if they have keramen and stool, like constipation, or their kidneys aren't working, or their liver's not working, or whatever toxic load, they can mobilize all day long and they're getting rid of it. So go back to what you were saying and why this is so much more important on the elimination, Right?



Dr. Paul Savage - 12:43

Because all the things we used before depend upon those things mobilizing the toxins from everywhere out of the tissue into the plasma. And you have to have a detox pathway that's available to eliminate it. The kidneys, the liver, the skin, the stool. That's how it has to come out. Plasma exchange is completely different because it's a mechanical process. We're literally taking your blood out, separating it, throwing it away, giving you a backup human. It doesn't depend on any of your genes, your kidney, your liver, your skin, your colon. It's going direct. So we're not giving you anything. We're literally taking it out.



Dr. Jill Carnahan, MD - 13:25

I love that because it's so simple. I mean, like you said, this has been around 50 years. And this is not a new technology. People think it is. And it actually has a very long history of safety and efficacy, which is also why it's so powerful. Paul, One of the things that we see is we're obviously mold related patients. This is a really big deal. And in my practice, and even the title of our talk today is Around Mold, because I know my listeners, my audience is all about mold. And we'll go, we'll talk about later because we have a special mold protocol that I helped create with MD lifespan. But what I want to talk about next is who benefits. Obviously, the mold. You can talk about them. But what kinds of patients most benefit from this procedure?



Dr. Jill Carnahan, MD - 14:06

Give me just a list of, like, the best candidates.

Dr. Paul Savage - 14:09



So, you know, as we talked before, not everybody needs tpe. Everybody needs to learn how to minimize your toxic exposure in your environment. And that's not difficult. That's what we're gonna be talking about in the book that's gonna be published here within a very short period of time. And everybody needs to check their toxin levels because you don't know what you don't measure. And everybody has every kind of toxin. There is nobody in the US that doesn't is toxin free. There just isn't. Now we talk about the mold patients and frequently I get people in from you and from all over the country because we have a very effective way of treating it with plasma change. But I also want to make clear to them you're not just mold toxic, you're everything toxic, including mold.



Dr. Paul Savage - 14:57

Everybody is, because back in the day, 10, 15 years ago, we'd really focus on mold because everybody still had a lot of toxins. But if you could bring one of the silos down like the mold, you could reduce the total burden significantly enough that people would get better. Same thing with chelation. You could reduce some of the metals far enough that people would get better. Or infrared sauna, you could reduce a lot of the volatile chemicals and the phenols by that way. And just because the total toxic burden came down, the total toxic load came down, their body was able to resume a very relatively good mechanism of feeling. Well, unfortunately, today there's just a lot more toxins out there, not only in the number of different toxins, but the amount of each of those toxins in the environment.



Dr. Paul Savage - 15:47

So when we start, which patients do the best? Well, mostly when we're looking at plasma exchange for patients, what I'm looking at is a couple different factors. Number one, symptomatology. The people who are sick already have enough toxins. I don't need the test to tell me they have too many toxins because their body is telling us already from their symptomatology that they're toxic overloaded. We can even see that in the blood test. When we look at the lymphocytes in the immune system, or the inflammation or the oxidation, or even the binding proteins go up because many of these binding proteins that your body makes naturally for things like, let's say estrogen or testosterone, they bind mold. And that's why the body produces more of it, because it's another way of hiding it.



Dr. Paul Savage - 16:31

The only defense the body has against every kind of toxin, including mold, heavy metals, environmentals, is to either get rid of it, hide it, or bind it. That's one of the three things has to happen. So the nice thing about plasma exchange is you're mechanically removing all of these toxins, which doesn't depend on any of these mechanisms at all. So the people that really have benefited the most from our protocols are the people who are symptomatic. Then on the backside, we do lab testing, which a lot of places don't, we do toxin testing. We look at their immune system because we want to show people at the end how much they improve not only symptomatology wise from their symptoms, but their numbers, so they can see that they've made progress.



Dr. Paul Savage - 17:16

And we have a very incredible track record of almost 100% that people are getting having the result that they want. Now, with that being said, our company isn't just out to sell TP to everybody. So there's probably a third of the time I tell people, maybe you should go see Dr. Carnahan or maybe you should go see a functional medicine doctor. Maybe. I think if you did infrared saunas and binders, that be sufficient for you. Because plasma change is not an inexpensive process. But it does work for those patients who bend the gambit and they've done everything, or the patients who are so sick that they don't have the time to do the binders and the chelators, because the sicker they get, the harder those mechanisms are to use.



Dr. Paul Savage - 18:01

As you and I both know, the sickest of the sick people, every time you give them a little bit of a binder or a little bit of a chelator or a little bit of. They just what we call hercs, they just don't feel well. They get fevers, they get. I mean, it mobilizes it too quick, it overwhelms the system and the immune system runs amok. We don't have that problem with plasma exchange because again, we're not giving you anything. We're just taking things away.



Dr. Jill Carnahan, MD - 18:25

Paul, that was so concisely and well said. And just from my clinical experience, I wanted to add that a lot of patients, just like you said, first thing is, when I see this total toxic load, we do some of the same testing for that. And if I see a lot of mold automatically, I will also see a lot of metals and chemicals and parabens and phthalates and PFAOs and microplastics, because mold by nature really trashes the glutathione system. So it's this double whammy of not only there's this toxic load from mold, but it actually impairs your ability to detox. So they get really stuck in a loop. And then I love this. We've talked about it a couple of times. I think it's so important.



Dr. Jill Carnahan, MD - 19:02

This mobilization idea is sometimes super toxic to a patient because if their routes of elimination, their lymphatic drainage or their kidneys or the liver are impaired or overloaded already. I feel like clinically, with the old protocols, we get stuck because the tiniest bit of mobilization makes them so sick because they can't eliminate. And again, I just want to reiterate this point because TP bypasses that issue that I see clinically, that has probably for, you know, 25 to 50% of my patients, kept us stuck. And then the other thing is, if I see a patient for the first time and we know there's mold toxicity, I am telling them in clinic, this is going to take a minimum of six months and many times up to 18 months or longer.



Dr. Jill Carnahan, MD - 19:43

And like you said, this is a much quicker process that can get them to the same point.



Dr. Paul Savage - 19:48

Yeah, I think you bring a really good point for patients to really kind of grasp. Grasp here is that it's not just about mobilizing it from the tissue. Once you mobilize it from the tissue, and let's say it gets into the plasma, which it has to get into, or the lymphatics to get to the organs that push them out. If those organs are overwhelmed and that lymphatic and plasma is already overwhelmed, mobilizing more toxin is harmful. Your body, literally, your body goes, I put them away. I hid them away so that I can manage. And now you're dumping these things all back on me. And that's why people crash. The difference with plasma exchange is we're not mobilizing right away. We're coming in and we're taking out the plasma, giving you back albumin.



Dr. Paul Savage - 20:30

You make brand new fresh Jill Carnahan plasma within 24 hours, which is much more dilute in the toxin load than it was previously. And now the important part here for people to understand is you have to wait a certain amount of time for the tissues to gently release those toxins back into the plasma, because the body goes to equilibrium. So if you have the now the load is shifted that it's mostly in the tissue and it's not in the plasma over the course of a month, and you need a month. And I'll explain why the tissues mobilize it into the plasma. And even if your kidneys and liver and colon and skin aren't eliminating any of it's not overwhelming the system because this is gentle transition from one area to another.



Dr. Jill Carnahan, MD - 21:16

Hey, guys. Just a quick interruption to remind you there are so many more people out there that are suffering from mold toxicity, autoimmunity, and complex chronic illness. I hear stories and the suffering every day. I just wanted you to know that at our office in Louisville Colorado Flat Iron Functional Medicine. We are accepting new patients. Many people don't know that. I still see patients in clinic and I have two mid level providers that are absolutely spectacular, Fawn and Hannah, and are accepting patients and they work directly with me. So if you are suffering or someone that you love from a complex chronic illness, please give us a call. 303-993-7910 to schedule. Okay, let's get back to our show. It's literally a mathematical equation of equilibrium.



Dr. Jill Carnahan, MD - 21:58

And that's what's so beautiful, is you're pulling out, giving room for it to pull out of the tissues again. So naturally your body's just going to keep mobilizing. And this is granted, you and I, we'll talk in a little bit about toxin avoidance and other things you can do. But even if someone were to not be able to do sauna or not be able to do a lot of the other things, they would still benefit.



Dr. Paul Savage - 22:16

Because they do, they do well with TPE because we don't depend on mobilization before extraction. We extract and then let the body mobilize afterwards when its load is less. The important thing that people need to understand is

nobody knew three years ago how frequently the TPE should be done. Historically, and many of the places still do this, they do 6 TPEs in 2 months or 2 weeks. The reason they do 6 TPEs in two weeks is historically plasma exchange was used to extract antibodies and immune complexes. And those are mostly in the plasma, they're not in the tissue. So you could do 1, 2, 3, 4, 5, 6 in a row. And you're bringing that immune complex and antibody level down relatively quickly. And the body doesn't mind that. But if you're doing toxin extraction, what we did is we measured the toxin loads.



Dr. Paul Savage - 23:12

We did a plasma exchange on a group of patients and then we measured their toxin loads at 1, 2, 3, 4, 5 and 6 weeks and afterwards to find out what the pathway where the toxin was. Interestingly enough, many of the toxins return within the first week or 10 days. Metals, phenols, the things that mobilize relatively quickly. But as you mentioned, the toxins that are stored in the fat, the microplastics, the mold, the pfas and the pesticides, herbicides, they take over three weeks before they mobilize to an equilibrium where we don't see any more increase in those numbers. So wherever you go to get plasma change, if you're doing it for mold, toxic or for any kind of toxicity on the chronic Toxins that people have obtained don't do them closer than a month apart because plasma change is expensive.



Dr. Paul Savage - 24:04

If you're going to use it where you're going to get the most benefit. That's why we don't do the. That's why we do a plasma change once a month for a series of three, or in mold patients, almost always five. Because again, this, the toxins. You know, there's a lot of toxins in the universe. There's more and more every reinvent, more and more every year, and we're putting more of the ones we've had before. But that doesn't mean that every toxin is as dangerous as the other toxins or as easy to get out. When we're looking at the ones that are difficult to extract, you're looking at mold, you're looking at plastic, you're looking at pesticides, and you're looking at pfas, partly because the way the body gets rid of them or hides them is to put them in fat cells, other cells.



Dr. Paul Savage - 24:48

It may be the bone, it may be the muscle, it may be the tissues, and those come out relatively quickly. But those ones I mentioned, they take time.



Dr. Jill Carnahan, MD - 24:58

Yeah, that's so clear. And I love bringing clarity to this because I think people listening, I'm sure are already understanding the power of what we're talking about. One thing I want to talk about before we go to mold specifically is contraindications. Is there any kind of patient that would be contraindicated from doing this? Medical red flags or age limitations?



Dr. Paul Savage - 25:16

So plasma exchange, again, is a very safe procedure. But, and this is an MD lifespan thing, this isn't everybody. Other clinic out there, we're doing it as an outpatient setting. So many of these outpatient places that are offering tpe, literally, you go in, it's up on the billboard, you can order tpe, they bring you over, they sit you down, they do a TPE that is incredibly dangerous. There are certain patients that you need to be very cautious at doing. Let's run through a couple of them. Anybody who is not able to cooperate with the procedure because they're confused, let's say moderate Alzheimer's and autistic, you have to sit still for four hours and you have to be able to follow commands. Patients that take certain medications that if their medications go low, because remember, plasma chase, plasma change takes out everything, including the medications.



Dr. Paul Savage - 26:07

So if they have issues with seizures, where if they mess with their levels a little bit, they're going to have a seizure or they're very bad asthmatics. When you mess with the levels, you send them into asthma or congestive heart failure, or what we call ventricular arrhythmia, where you're in medicine to control the heart from having those deadly arrhythmias. This is not people you want to do plasma exchange on in an outpatient basis. This is somebody you want to do plasma exchange on in a hospital setting. Whereas if you have a complication, you know what to do about it. We don't do it on pregnant women just because, although it's safe, this is outpatient procedure. We don't do it on people under 18. And that's mostly because malpractice excludes anybody under 18. I mean, it's just. It's again, one of those things.



Dr. Paul Savage - 26:52

Kids have a different set of parameters that go. Go along with that. And also, anybody that's had a major event, a heart attack, a stroke, or congestive heart failure within six months, we will wait six months, and then we want a clearance from the cardiologist or the neurologist before we do it. Not that plasma exchange is dangerous in those people, but simply put, those patients who've had a heart attack or stroke or congestive heart failure are at a higher risk of having another one within three to six months. So we want to make sure you're well outside that window, because this is an elective procedure for people to do.



Dr. Jill Carnahan, MD - 27:32

Oh, Dr. Savage, that's so clear. And I love that, because as we talked in the beginning, we are. You're doing this. MD Lifespan is in my office in Louisville, Colorado. And it's so exciting to walk down the hall and see people benefiting from this. Your team is amazing. Your nursing staff, like, what you've done, is take something that could be super complex or in the wrong environment with the wrong equipment, potentially dangerous. And I feel so safe having it in my office. And your team is literally extraordinary. You and I talked about that, too. Like, the way you do patient care. It really matters. And that's one of my favorite things about working with you. Is it really? The patients love the team. They love that. We love having your nurse there. And it is spectacular.

Dr. Paul Savage - 28:13



MB Lifespan is owned by and operated by medical people. We're all doctors, and so we all believe that the patient safety and the patient experience is number one. I have to put a shout out to all of our nurses that we hire. They are incredible, and they really are incredible. Let me tell you why. They have at least 10 years experience in ICU or ER. And on the IV team of a hospital, this is the team they call when nobody else can get an iv. All of our nurses have at least five years of experience in ultrasound guided IV insertion. We haven't missed an iv, nor do we poke you six times trying to find an iv, even on the most complicated people by using ultrasounds. I mean, I think we're at the 94 percentile now on getting it on the first attempt.



Dr. Paul Savage - 29:01

All of our nurses are certified as TPE technicians. All of our nurses have completed the University of South Florida personalized Medicine program. All of our nurses are ACLS and BLS certified. And we go through patient care scenarios once a month where we run all the different events that could happen. So all of our nurses are very well prepared in every one of the office. I'm very proud of our nursing staff and patients. Compliment them on their exit interview. I always ask them, how was your experience? And they always comment, the nurses were fantastic and they really are.



Dr. Jill Carnahan, MD - 29:38

Well, I'm so glad we talked. That wasn't a planned question, but I love saying that because that's my experience. I mean, we have your team in our office several times a month and we all love them and it's just so easy. So it's really special that you created an incredibly safe protocol to hire as well.



Dr. Paul Savage - 29:53

I used to run the. I used to be one of the docs at the largest trauma center in the world for 10 years. And I ran the ER with my nurses. I know the value of having high quality nurses to work for me. I mean, it's just there's. It makes my life better. It makes the patient's experience the best.



Dr. Jill Carnahan, MD - 30:10

Yeah, well, thanks for doing that because not everyone out there is that detailed on what matters. So back to mold. I said we'd come back to this one thing and this will lead up to your book that's coming out that it's free for. If you're listening out there, stay tuned, we'll talk about that. But for those who are in a moldy environment, so they are living in a building or a home or a place with mold, and they're like, oh, I want to do tpe. What should I do? Does it make sense to do TPE while they're still being exposed, or should they wait or eliminate the exposure first?



Dr. Paul Savage - 30:38

Always recommend patients do the avoidance therapy first, because rule number one of detox is don't put them back in. We will get them out. It's not a matter of if, it's just a matter of how many plasma Exchanges do you need to have? The reason I say that is we've proven it on thousands of patients. The numbers go down, but some patients are more resistant than others. Also, we should talk a little bit about what we've added to the TPE that makes that even more effective because our protocol, which we call Advanced Serial tpe, combines not only avoidance therapy teaching, but nutrients along with the TPE timing. And we actually got an international patent on that because it was so effective. But what you're saying is very true. Frequently we'll get people in and they may be mold patients or other toxicity patients.



Dr. Paul Savage - 31:25

And we've identified what they're not doing yet on the avoidance therapy. And I always tell them, go do spend your money there first, because you need to have an environment that you're safely returned to after we get the toxins out. We have had patients who didn't do that and when they did their follow up testing a year, some of their toxins had come back up and it was directly related to did you do what we told you about the mold? For example, did you get a dehumidifier? Do you have a HEPA filter? Do you make sure that you're cleaning your food properly and buying the right food? Do you have all these things with water filters and food storage to make sure that you're buying the best food possible? Do those things first before you come get the plasma exchange.



Dr. Paul Savage - 32:12

We want the plasma exchange to be a one and done when you're done with the protocol. If you're following the avoidance therapy three years later into this, we haven't had a single patient that needed to repeat the protocol, but they all have to do the avoidance therapy.



Dr. Jill Carnahan, MD - 32:27

Yeah, that's a really good point. And that leads into our next question. So you just said basically three years later. So what my question originally as a doc that didn't understand this and we've talked about this would have been, was, oh, you know, you get it down in six months after five or six treatments, but does it stay down? And the truth is it? Yes, it does.



Dr. Paul Savage - 32:46

Yes.



Dr. Jill Carnahan, MD - 32:47

So my next question, which is one of the stats that you talk about is what is the claim of removing up to 90% of circulating toxin actually mean?



Dr. Paul Savage - 32:56

I'm sorry, I didn't hear the question.



Dr. Jill Carnahan, MD - 32:57

What does the claim of removing up to 90% of circulating toxins actually mean?



Dr. Paul Savage - 33:03

So when you're looking at toxins, let me be real clear here, our goal isn't to bring all your toxin levels to zero. That's not an obtain, it is obtainable but you would have to do a lot of TPEs in order to do that. Our goal is to reduce your toxic load enough where you feel better, your immune system is responding, the inflammation is going down, the oxidation going down, and we see your toxins have decreased. And generally on the quantity, it's down between 40 and 60% of the total number that were in the upper ranges. So the 90%, when we say we remove, let's say, 83% of plastics of microplastics, what we mean by that is we're getting you down to what's the lowest level that we can measure. For the mold, for example, there are different ranges.



Dr. Paul Savage - 33:54

There's the range when people, as you explained, many times when they're doing the mold testing, this isn't the range of safe for you, kind of bad for you, and really bad for you. What this range is that we have is you compared to every other American. And what those ranges are, and the way we do it, is called a survey range. So the government measures these numbers on a whole bunch of people every two years. And the number on which the upper 5% are above, that's the number for the red. And the number above which 75 or the 25% of the people are above, that's the other number.



Dr. Paul Savage - 34:28

What we've seen over three years is we get those near the 75 marker, and most people's toxic burden is low enough that they can start mobilizing and doing it themselves, and they don't need further TPE. So when we say we have a 95% reduction, we mean from wherever they were, we're down very close to that 75% border.



Dr. Jill Carnahan, MD - 34:48

Oh, that makes so much sense. And this is always what I'm teaching is this total toxic load. And when you fill up your bucket, whatever that is, some people have small or large capacities and start to spill over. You have symptoms, and what you're doing with TPE is bringing that water level down so that their body naturally can kick in and do what we're. We're made to do, which is we detox.



Dr. Paul Savage - 35:06

That in the bucket analogy, is kind of like you have a bucket that gets filled and filled, and finally it overflows on the top. We want to bring that load down. So it's about 25% under the top. And that seems to be a level that most people's body can manage. Now, with that being said, we have had a couple patients where we've got their toxin load down, but they're still symptomatic. We do a couple more TPEs, because on those people, maybe they need a 50% level. And so in that way, we never know going in, but we're pretty good at this point on telling people, you're probably going to do five, you're probably going to do three. On a rare occasion, we've had to do eight. But we knew those from the beginning, usually because we're like, yeah, we'll do five, and we'll remeasure.



Dr. Paul Savage - 35:49

That's another important thing about measuring before and afterwards, because it's not just that the patient feels better, that's important, but we want to make sure the body is responding in a way that the clinician who's going to follow them after us can monitor those numbers and make sure they continue to improve. Because not only do we see the toxin levels come down three years later, but we see the immune system increasingly get stronger. And in the cases, it gets less confused, it becomes less erratic. Inflammation maintains down oxidation maintains down, telomeres get longer, Cancer markers go down, Alzheimer markers go down. And so we want to make sure that people are continuing forward. A lot of it is about their symptoms, but a lot of it helps with clinicians, we should be able to monitor those levels.



Dr. Paul Savage - 36:36

And if they start heading back up, you can intercede before you have to come back for tpe, which is what we've seen in the majority of the patients that most what it usually is on the Jills, they moved into a moldy house. I had a patient who was very sick. I don't think it was one they referred, but it was one of the patients that had just a lot of mold. We did the protocol. They did fantastic. They're swelling, their face went down, their fatigue went away, their anxiety went away, their problems with their gut went away. And they did well for about two years. And then they called up, they did another test. And I got on the phone with them, I got on the video with them. I'm like, what happened here?



Dr. Paul Savage - 37:13

And he goes, you know, I walked into this new house and I could smell it. I could smell it when I walked in. Because I think mold people are hypersensitive to the smell of mold in many of the cases. He goes, but I stayed there for about nine months and. And then they started not feeling good, and they're back. And so it's kind of always interesting stories hearing from the patient.



Dr. Jill Carnahan, MD - 37:33

You can always kind of find where it went wrong. So let's talk a few practical questions. What's a typical treatment day look like? For the patient, like time commitment, recovery, walk us through, like, say they're scheduled at 9am on a Monday. What would that look like for them?



Dr. Paul Savage - 37:49

So what it looks like is they get a phone call the night before. Because one of the reasons we have a lot lower. We have a third of the adverse reactions that are reported nationally because we prep the patient very well before they come in. We want you to eat a good breakfast because blood sugar goes low, but if you got food on your stomach, we're not going to see it nearly as much. We want them to be well hydrated. We want them to not take certain medications and supplements the morning of the test, because we're just going to take them right back out with tpe. But also if they're on blood pressure medicines that may cause us an issue that may increase the risk for the.



Dr. Paul Savage - 38:24

So we prep them the night before when they're they come in the day, they're greeted by our friendly nurses. They're brought into the room on the first time that they're getting tp. There might be some papers assigned, some questionnaires to fill out, but typically what we do is we do a weight on them. We poke their finger to get a what called a hematocrit, or the concentration of your blood, by which we can calculate how much plasma you have. And by that we can determine how much we're going to remove. Then we set you in a chair and the nurse talks you through the insertion of the two IVs. Typically, it's one in each arm because they go in one arm and out one arm and in the other. And typically you're in this very comfortable chair, squeezing these rubber balls.



Dr. Paul Savage - 39:03

You have some tourniquets on your arms. And then we turn the machine on, and the machine typically lasts for about 90 to 120 minutes, about an hour and a half to two hours to do a full cycle where we're just constantly taking

out your plasma and replacing it with this albumin. After that time, with our protocols, we're giving you an infusion of nutrients. Remember, plasma exchange takes out everything good, bad and ugly. Why we got the iv. Let's give you back some electrolytes, let's give you back some vitamins. Let's give you back things that your body's going to need to start detoxing in the time in between treatments. One of the things you cover very well when people are toxic, it displaces many nutrients in the body. So people who are toxic are already by nature nutrient deficient.



Dr. Paul Savage - 39:52

So not only is the plasma change taking out more of those nutrients, but the toxins have already displaced a lot of those nutrients like magnesium, zinc, B vitamins, because you run through it with all the stress that you have. So we take the opportunity to infuse the IVs there. Then we talk to the patient about any kind of medications or any kind of protocols they're going to be doing in between the treatments. And that may include the supplement that we put together with your help, which has 65 different supplements in it. All these things are anti inflammatory, antioxidants, detoxification, mitochondrial support and energizers. Because this is an opportunity to start replenishing the body in between the treatments so your body can start to heal.



Dr. Paul Savage - 40:36

We also use, in some cases, we might use a binder, we might use phosphatidylcholine, we might use low dose naltrexone, we might use dmsa, and we might even use some regenerative products to help speed the tissues healing. In the cases of those patients that have some cognitive issues or they have heart issues or they have immune system issues, because the immune system is a system that needs healing as well. And that also includes the mold patients, because mold destroys everything. Right.



Dr. Jill Carnahan, MD - 41:07

It affects enzymes and affects. Yeah. And I really enjoyed helping work with MD Lifespan to be part of that mold protocol. So it has my stamp of approval on it, which is such a.



Dr. Paul Savage - 41:17

And it's. It's one of my favorite protocols. I mean, we have protocols that treat heart and brain and women who want to get pregnant want to reduce their toxic load. We have protocols that treat autoimmune diseases and the immune system. But the mold toxin protocol, it's so pleasing because these people come in and it really is spectacular to not watch just them get better, but their numbers get better. And knowing we've actually done something for these patients that have suffered so long and have been so difficult as clinicians for us to treat. Because every time we try to do any little thing with them, they respond. Yeah. And not in a good way. You know, they.



Dr. Jill Carnahan, MD - 41:57

Exactly. That's what's been so amazing with partnering and just your ethic and integrity and how you do it. Two more questions. We'll make these last ones kind of quick. The first one is just people out there may have heard of Inospheresis or Ebo or some of these other things. Can you differentiate just a little bit between what your plasma exchange does and some of these other things they might have heard about?



Dr. Paul Savage - 42:18

Sure. Let's start with inophoresis in yourphoresis is close to plasma change. It's not available in the U.S. it's available in Europe and in the Asian countries. I don't know if it's going to be available in the U.S. the difference between inuphoresis and plasma exchange is inuphoresis is often called the more gentlephoresis because what they do is the blood comes out, it separates the plasma from the red blood cells, then they filter the plasma through a filter and then the filtered plasma, not albumin, is added back to your cells and re infused. The benefit is you're not using albumin. Now that may be a benefit or a downside because albumin acts like a sponge. So that can be debatable. But the one thing that's clear is the filter is not going to remove as many toxins as throwing everything away.



Dr. Paul Savage - 43:09

But the effectiveness of plasma change and removing environmental toxins, mold is much more efficient in one plasma exchange than it is one in euphoresis exchange. Now you could do three or four and get the same effect as you get with tp. We don't know those numbers yet because there have not been any comparative studies. Because again, the idea of using plasma freesis to remove environmental toxins, including mold, is new. I mean, we figured that out three years ago, you and I and the group I'm with. Everybody now talks about, look at how much toxins that we pulled out. And I keep reminding everybody we're the one that put that together before that people are using it because they thought they were removing some magical particle and that was making people younger. But the fact is they were removing toxins eboo.



Dr. Paul Savage - 43:54

Now that's a very effective, that's extracorporeal blood ozone therapy. That's a very effective procedure by which you take the blood out and you add ozone, which is O₃, to the bag or to the blood as it's out. Ozone is oxidation. Yes, it burns everything. That's what oxygenation is. When we talk about oxidative stress, we're talking about things that burn other things. And when you add ozone to a bag, the red blood cells and the other cells, they can manage the oxidative stress, but things like Lyme and viruses and some of the toxins break down because of the ozone. Because of the ozone.



Dr. Paul Savage - 44:33

And then you do a little bit of a filter, but then basically you're introducing most of this back into the body and

hoping the body can get rid of the debris, plus you're hoping that it can manage this Extra oxidative load, which is significant. They're giving to people, which is why evil on mold patients is very hard, because you just do a little bit, and they start reacting because their oxidative pathways are maxed. And now you're adding this huge oxidative load. And it's just, again, for getting the toxins out. It's not as effective as plasma chase. So there is a place for ibu. I like it a lot after we get the toxins out with people who still have Lyme and viruses. Yeah, let's go do IBU at this point.



Dr. Paul Savage - 45:17

But we've already got the toxins out, so we've unloaded most of the oxidative stress. So you can handle this oxidative load now. So there's marked differences, but there's places for each one of these things.



Dr. Jill Carnahan, MD - 45:28

Yeah, I love that you said that, because personally, I have some snips around taking care of ros. I have multiple very strange genetics that make any sort of oxidative stressor even hyperbaric treatment for me, an increase in ros, which sometimes when I'm not in a great state, my body can't handle. And I see that in my patients. So I really love that we clarified because a lot of people are out there getting, you know, told they should do this and this, and not everything is good for every person. And so I think it's important that a lot of my patients are like me and that they're extra sensitive to that load of oxidative stress. And oxygen seems benign, but people can die of too much oxygen.



Dr. Paul Savage - 46:04

So it's actually oxidation is great to use if you're using it on the right person for the right. For the right process at the right time. Like you said, you got all these tpe. We. We have the exclusion factors we use. But as long as. And that's not a lot of people that we exclude, most people can do tpe. It's relatively safe for these people. Again, the difference is I'm not giving you anything like we do with ebol, where I'm giving you ozone. I'm just taking things away. We're just removing them and substituting with albumin. So it's just an exchange. You know, I always pretty well known for saying. I started out by saying it's the oil change for humans. That's what TPE is.



Dr. Paul Savage - 46:42

We're giving you an oil change where you can think of the IV and the oral supplements as the air for the tire, the gas for the tank, and the spark for the plug. So we're accelerating the healing process by including our patented protocol together, which we made. Then once we had our patented protocol, you and I got together and we put together extra things onto it which are very effective for the mold patients, including adding a binder, adding a chelator, adding phosphatidylcholine, adding nasal sprays that help with the marcans and the nasal mold colonization. Because the TPE removes mold toxins, but you still have to kill the mold at the same time. I mean, that's why we always at MD lifespan. We are not your functional medicine long term provider. We are the TPE experts.



Dr. Paul Savage - 47:29

Functional medicine doctors like you send us your patients, we clean them out, we send them back to you. Now, the things that you couldn't use before you can work much and they're much further down the pathway than where they started. But patients need to follow up with their primary care doctor or a functional medicine doctor afterwards because there's more to do. I always tell people, well, our protocol isn't the end of being sick, it's the beginning of being better.



Dr. Jill Carnahan, MD - 47:54

Yeah, that's so well put. Last question, and what people may have been also waiting for is what are the financial implications for. I know you have multiple protocols in a range, but give us just a little outline on what people may expect with the finances of paying for tp.



Dr. Paul Savage - 48:09

Sure, sure. So looking across the country at plasma exchange, you're going to find costs between \$4,500 and \$10,000 just for the plasma exchange. Unfortunately, it's still relatively expensive. The machine is very expensive, the parts are very expensive, the training is very expensive. It's just one of those things. It is an expensive procedure. So if you go into any different place and order five TPEs, you're probably looking at somewhere between \$36,000 and \$50,000 for five TPEs. And if you're a mold patient, you're probably looking at 5 TPEs. Especially if you're a symptomatic mold patient who wants to get better, you're probably looking at five TPEs.



Dr. Paul Savage - 48:49

But what we do at MB Lifespan is we take that TPE and we add in all the labs, all the doctor visits, all the IVs, both oral and nutrient, all the medications we're using, and we wrap it into a package price. So if you're looking for three TPEs from us with our toxic protocol, you're looking about \$23,000. Now, if it were anywhere else, it'd be \$23,000 just for the TPE. Not including all the other things and having a doctor assigned to your case. If you're looking for the mold protocol, we're looking at \$40,000. But again, this is not just the five TPEs, but it's all the other stuff that you're getting with it. And then we have what we call the mold plus protocol because many of the patients have sustained damage to their tissues, especially the ones that are symptomatic.



Dr. Paul Savage - 49:36

That we see there is an increase in cost of \$8,000 where we give regenerative therapy therapies to patients at this time to help accelerate the healing process. And that work. Now, the people who don't do the regenerative

therapies, they still improve. The patients that do the regenerative therapy improve quicker.



Dr. Jill Carnahan, MD - 49:53

Yeah. What a great. Oh, my gosh, this is so fun. Dr. Fall. And lastly, now people are probably wondering, okay, what about if I want to know more or whatever, I want to just state this, and then I want to have you talk about this avoiding toxins book that you've offered to put on our landing page, free for people who want to know more. So, first of all, if you want to know more, MD Lifespan offers a free consult with one of their doctors for 30 minutes. So there is no obligation. I know. You guys are so great.



Dr. Paul Savage - 50:22

Actually, there's two appointments for free. The first appointment is to just make sure you qualify. Yes. We don't want to waste your time. We don't want to have our time by somebody that's not qualified or isn't aware of the price point. We're very clear up front to make sure that we want to move you into an appointment with the doctor. The first appointment to, it's called the patient information call, is where you're talking to one of our providers, and we're just going through a list to make sure you understand the price. You have an issue that we can go ahead and work with and that you're. That you're not excluded from any of those criteria. Talked about at that point. You move into an evaluation where you fill out a questionnaire, you can upload all your labs.



Dr. Paul Savage - 51:03

Our doctors look at all of these well before your appointment. They always come to these appointments well prepared, and that's an hour with our provider. Again, there is no charge for that appointment either. We only charge if you sign up for a protocol. So we just want to make sure people get good information. And even if they're not working with us, we're happy to see them, to tell them what we do differently than other things. Than other places and why the other places should be following suit with us. Then there comes the part where this book that we put together, it's been a challenge over the last 30 years of working with toxicities. You've done a wonderful job at writing a book on how to avoid mold and what you need to do in your environment.



Dr. Paul Savage - 51:43

But we kind of went past that, we needed to go past that and I enlisted the aid of a very well known known clinical toxicologist, an environmental toxicologist, a mold toxicologist and a public toxic, public health degree in toxicology. We got all these people together and we sat down and we wrote a book about how you can reduce your toxic exposure in a safe, non fear based method. We give you the science and we tell you the science when we know it, we tell you the science when we don't know it. But we also give you various different product lines that conform to what we're suggesting that people use. We're not saying that we're comprehensive of every good product out there, but you know, when people come to us and like, what kind of air filter should I get? Something like this?



Dr. Paul Savage - 52:32

And we want to give them examples. So this is a very well written book by a lot of very smart people. As far as we know, it's the most modern example and the only example of something that's comprehensive in the whole environment. We know this works because we have three years of evidence on patients who have had the plasma change and have followed this avoidance protocol and their levels today are lower than what they were when we finished the protocol three years ago. So if it works on them, it will work for you on keeping your toxic level down, if not even reducing it. Because the biggest thing is it's like that bathtub again. If you keep pouring the water in faster than you're pouring the water out, eventually you're going to overflow the bathtub.



Dr. Paul Savage - 53:14

Our goal is to turn down the spigot so the flow in is nominal because you can't completely eradicate your exposure toxins. But we've proven that you can do it significantly enough that your levels will drop.



Dr. Jill Carnahan, MD - 53:28

Paul I am certain this episode is going to be one of our most popular ones because it's so practical. We just filled so much great information in this time. And for those of you listening, Dr. Paul and their team at MD Lifespan have created a landing page for my listeners. It's mdlifespan.com Dr. Jill on that landing page, if you go there, they're going to release this free book offer to you if you're listening. And more importantly, if you want to schedule a consultation, just a free, you know, intro call or a call with a doctor, you can go to that page and you can schedule a call right on that page. So I would recommend if you want to know more information or someone you love is suffering from multicaust, share this podcast with them. Share this episode.



Dr. Jill Carnahan, MD - 54:09

There's no obligation, but I am a believer. I stand behind me lifespan. I stand behind the integrity of Paul and his team and that's why I'm so passionate about this. And most of all, just thank you Paul for your brilliance in bringing this into the world. And guys, there's another episode that's one of our top list in podcast. If you haven't yet seen my other episodes with Dr. Paul, just search on my resiliency radio for Dr. Paul Savage and you can hear that other episode as well. Dr. Paul, thank you. Thank you most of all for just taking your heart and mind and your beautiful entrepreneurial spirit and creating this process procedure in a safe way to help those people who are suffering.



Dr. Paul Savage - 54:45

It's been my pleasure always. Thanks, Jill.



Dr. Jill Carnahan, MD - 54:48

You're welcome. Hey guys, wasn't that a great episode with Dr. Paul Savage from MD Lifespan? As I mentioned in the end of the podcast, he is offering his free book Avoiding Toxins on my landing page, which is MD lifespan.com Dr. Jill so you can get that free book there. You can also schedule a free consult, actually two free consults. If you want more information and you're just not sure if this is right for you, there's no obligation. They do not pressure. So this is absolutely just to get more information. Most importantly, if you know someone that you love is suffering from multi toxicity or either autoimmunity, brain issues, cardiovascular issues, cancer issues, fertility issues, they have protocols for all of these things.



Dr. Jill Carnahan, MD - 55:30

I highly recommend you give them that link md lifespan.com Dr. Jill because it'll they can do a free consult and get more information. And if you guys haven't yet subscribed, please join our over 820,000 subscribers on YouTube. Hit that subscribe button. Hit the bell to be notified of future episodes. And as you know, we have new episodes coming out every week. So I will see you again next week on another episode of Resiliency Radio. Until then, be well.