Introduction and Guest Background

– Hello and welcome to this episode of the Environmental Toxicants Auto Immunity and Chronic Diseases Summit. I'm your host, Wendy Trubow, MD and my co host, Dr. Edward Levitan. And we're going to get rocking and rolling today today. Every time I say this, but it's true.

This is one of my favorite people. I gotta say you're going to say you can do that thing. You do the cheer. – [e] Anyway. So Paul Anderson is um one of my mentors and I, he teaches, he's been teaching throughout the country, I think the world. Um And every time I hear you speak, uh I learned something new that's valuable to my patients.

So it's incredible privilege. So now you can now do the official. – Now, Dr. Paul, welcome to the show. Dr. Anderson is a recognized educator as Ed mentioned, author, clinician and integrated and naturopathic medicine with a focus on complex infectious chronic and oncological illness. He's got three decades of clinical experience.

So as Bostonians say he's Wickets Matt and he was the head of the Interventional arm of U S National Institute for Health Funded Human Research trial.

He's written numerous books. He's a frequent CMI speaker and he's also now created programs to train the next generation of providers. So that's really a privilege privilege to have you here.

Paul. Thank you for being on the summit. – Thank you so much for having me. That's great. – [e] So I know we're gonna today speak about metals and just for the audience say, Paul can go like this. – [W] I know this is a sliver, this is a drop in the bucket for what like literally you've forgotten more than I've ever learned. That's how I feel.

So what, that's a nice thing to say, right? So we're talking about medals. How bad of a problem they are. What do they do to our health and what can we do about them?

Because ultimately, we want to inspire and empower people to have improvement. So how bad are heavy metals as far as environmental contamination? – Very, very good starting point? Yeah. So yeah, I will just give a disclaimer that when, when I teach a two day course about this, there's usually about 800 slides that go with it with all sorts of research.

So we're just gonna give the big picture and, and, and help, help you see the best way to, you know, deal with these things. But you know what I usually start with with patients is our human bodies are not really set up uh to use or receive heavy metals very well. We can process tiny amounts and they will go in and out.

But anything beyond that. And they have a lot of very deleterious health issues that they can cause or aggravate.

How Heavy Metals Harm the Body

So I think that the, the big thing to kind of think about, especially when you're thinking as a, as a patient would be, what, what do they really do to us and, and why aren't they supposed to be in our bodies, et cetera.

So we have other metals, copper and iron and other things that, that we use for all sorts of real positive biological processes. One of the things that heavy metals does, there are many, but one is to substitute for the good minerals that we use in our body.

So in substituting one of the biggest problems that they can create, which has downstream effects in every part of your health is they will go and be a part of an enzyme co factor where maybe something like magnesium should have been or another good mineral and they will go and then when they get to the enzyme and help to bind with it, they actually torque the enzyme so it can't work anymore.

Sometimes the enzyme will work, it'll work, it'll behave oddly or work very slowly. So, enzymes are what help us make our hormones, make our neurotransmitters in our brain, help us regulate our muscles. You know, you could see that this could be a pretty far ranging issue.

Another real important thing that they do just at the base level beyond enzyme activity, which is may be their biggest area where they cause health problems.

They also will bind that receptor sites. So you might have a receptor on yourself where a hormone binds or some other important cell triggering molecule.

And when they get on those receptor sites, they again will either change the receptor. So it won't fit the hormone or they'll slow it way down. So the health effects are really on a couple of levels.

So in our, you know, our big classes for physicians, we spend the first half of the day going into health effects of just, you know, the big four heavy metals.

And of course, there are many others, but there are very clear associations with heavy metals and things like hypertension, blood sugar regulation issues and aggravation of diabetes, etcetera, um aggravation of endocrine problems and perpetuation of endocrine problems, auto immunity uh and even some cancers.

So they really can affect just about everything uh that our body tries to do normally and cause our body to maybe do it in an improper way. – [e] Well, you mentioned four. So let's let's kind, I want to make sure that what are the top four? – Well, partly it's it's an arbitrary decision so that that part of the class doesn't last for three days, but the lead mercury arsenic and cadmium.

Uh and they are probably, I mean, there, there are many other toxic metals that are very, very bad for you. And we hear about them in cancers and things.

But those four uh probably have the most data around them in connecting them to very, very common diseases. I mentioned, you know, cardiovascular and endocrine, etcetera. And so we, we focus a lot on that in the trainings because ultimately what we do to lower heavy metal intake and help with elimination really uh will help the other metals too.

– [w] So how, how widespread is this? I mean, I know personally that this has been My 10 tax that I've been sitting on like my whole life. So I know personally it's been very impactful in a negative way.

But is it only know it's like eight out of 10? I think it, I think all my problems stem from some kind of toxic exposure, which includes Your genetics is only 15% of it. It's only a little bit of the, of the worst genetics. But anyway, speaking from personal experience, this is a huge problem.

But, you know, the whole world isn't like dealing with me. So, how big of a problem is it for general population? – Yeah. You know, I think that's one of the things also, you know, once speaking with patients, once you get past the idea.

Well, why are they bad for me? The next thing is, well, why haven't I heard about this before? This didn't seem to be a problem for my parents and my grandparents. And I think that's an important point to make.

Common Metals and Widespread Exposure

And that is if we go back to the, you know, when my parents, uh, were young in the 19 twenties and thirties, the amount of toxicants in general, whether they're chemical or metal toxicants were so much less than they are now, um, To the degree that the endocrine Society of America puts out the endocrine disrupting chemical reports and they update them every 2-3 years and each time they update them whatever toxic chemicals or metals they look at are more of a health impact than they were even two or three years prior. This has a lot to do just with, you know, industrial use of things. Um home products that have, you know, metals in them that we didn't used to think maybe

were a problem, you know, many, many things like that. So the environment is a lot more polluted than it used to be. And even though, say, for example, you see certain trends with lead, uh maybe getting a little better as we got rid of leaded gas. The problem is, is that the lead from all of that and the lead from non gasoline involvement is pervasive in, in our water systems. In many cases, you know, there are thousands of water systems that have led problems uh and uh and air quality, etcetera. So I think that the, the you wouldn't even call it creep really. You would call it just the advancement of toxicity every decade is a big part of the problem and that's a negative thing. And so human nature causes us to not want to think about how toxic our environment is. But that's a very, very big issue. – [w] Well, basically what you're saying is that we could have dealt with it if it were a small amount and we may still have a small amount, but we're getting deluged with other toxicants. I think we met up at the glyphosate when I was talking about glyphosate. So there's glyphosate which is everywhere.

If you drive a car, you're getting gasoline fumes unless it's electric. And you still think getting microfibers from the tires like it's endless, the air quality of the water quality, the lead pipes in your neighborhood, the the flame retardant you sleep on. So it's just this.

And also I think also we haven't talked about that. The lead and mercury are generational. So if your great grandmother and your grandmother, you know, it's maternal, essentially your maternal lineage of toxins because it comes through the placenta and the breast milk.

So passing along a huge issue. – You know, I have intergenerational, you know, families that we see and you, you often will see, you know, mom have a certain profile of metal toxicants and you know, I've tested the first two Children and it's interesting that they'll have, they'll each have half of mom's toxicants load because it does pass through, you know, passes down.

Um, for example, we're better at this in North America than we used to be. But I, certainly not that long ago. I had, uh, pregnant patients who would get dental work done and maybe have a vision of an amalgam or they would even put amalgams in pregnant women. Not that long ago.

And we would have babies born with, uh, with mercury toxicity that we could see on testing and the baby was never exposed except to mom's toxicity. So, it's, it's a, it is a huge problem that sort of bio concentrates as each generation goes along. – [e] Right. I have an inflammatory question.

Well, but like we've been doing this work for a while. Right. And, uh, when you go outside of anybody doing functional medicine or integrative medicine, let's say, um, it's still so fringe is there.

You do what you do the teaching? Is there a slow uptick of receptivity? Because this is so not, this is so outside of what we learned in medical school.

Uh, and what doctors think and in Massachusetts even worse than most other places. Yes. Pretty conservative state you're in there. Yes. Yeah. Yeah. So that, I think that's a really important point to and, and I would always have this discussion with patients because they would get this information for myself or somebody else. They'd see their primary care and the primary care would say, well, that doesn't mean anything or, you know, you don't have that problem and, and I've even had, you know, people with elevated blood lead and, you know, they get to the toxicologist and they'll say, well, that's only a problem if you're a child, don't worry about it.

Uh, so, so, yes, there's a big world view that's, that's quite different and patients don't even know that there are other physicians just aren't going to see it this way.

The very good way I think to talk about it is there's the medical specialty of toxicology, which is really for acute toxicities and management and keeping you from dying from acute toxicity, which is certainly a big problem if they do occur by and large.

The specialty of toxicology is not interested in low level exposure. Even though there is so much data on low level exposure and health problems. It's just that you're not going to die today from it.

It's going to shorten your life, you're just not going to die today. So, on one hand, I will say so for example, our, our ivy calculation training the two days and 800 slides, that's uh we've done that 20 years now and in the time span that I've been doing just that course, with this group, we've seen more and more and more medical doctors coming and doing that training, even some toxicologists, not very many, but even some because they understand that, you know, this is playing a role in their patients health.

Uh they tend to be there in family practice. We get a fair number of allergists uh and other specialties who are interested, but that has become a larger group now, you know, it's still a minority. So a patient going out asking around, it's still going to be a minority.

Um But I think that's really the distinction is, it's, we're not usually talking about acute toxicity that might end your life. We're talking about low level exposure that is going to damage your health and the treatment.

Sources of Exposure in Food, Water, Air, and Generational Transfer

And uh and, and all of the intervention is different than for an emergency kind of add on you. – [e] Talk about low level exposure. What I want listeners to understand is yes, it's low level exposure, but it's chronic exposure. So it leads to it can lead to with the right genetics and the right detox quote unquote, right uh can lead to significant build up.

So I just want to make sure, yes, one low level exposure is probably not gonna do much for you, but most of us are supposed for a long time. – [w] I'm really struck by our ability to diagnose chronic diseases went faster than our ability to understand why those chronic diseases were happening.

And so most humans say, oh, well, if I have diabetes or have chronic fatigue or I have osteoporosis or even hearing loss, that's just a function of getting older.

And my response is no, it's a, it's a function of getting more exposures and you're going to get sick from those exposures and that's how it's gonna come out.

But I was, you know, I, I wish I had known about the impact 20 years ago to save my hearing and to save my, you know, actually, I don't know about osteoporosis.

I'm gonna check that. But, but for so many people who are just saying, oh, well, I'm thin and I'm white and I'm old. So I've got Austria process. Well, yeah, you probably have medals too because that's your generation.

– Yeah. And there are definitely associations especially lead in osteoporosis, but some of the others too. Yeah. Yeah. – [w] So where are people getting exposed to them now?

I mean, certainly I always say to people, are you a weekend warrior? Because don't cut into your walls if your house was built before 1978 because you're, you're getting, you're getting a lead exposure. Don't do that, but the lead lead gasoline is gone. So, how are people getting exposed now?

– Yeah. So, um, you know, as we mentioned earlier, there's, uh, you know, there's the famous case of say the Flint, Michigan water system and lead for various chemical reasons.

Well, that reason the basics of that is in over 1000 other municipal water supplies. They're just not as famously known for high led etcetera, but generally speaking, even if you have well water, it's not uncommon in water supplies to have any number of metal toxicants coming in, you know, through your water and you can think, well, you know, I filter my drinking water, which is good. We should do that.

A lot of people don't think to also filter the water they cook with. Uh, and, you know, other things. Um, so water sources are one of the most persistent and common, you know, places that we see it and you can have your water tested to see. But, you know, that's one place you can reduce things. The next is bio concentration in our food supply. And, um, one of the things that they're, they're a lot more open about anyway, you know, if they're better

than us.

But, uh European health agencies are very clear about airborne pollution and its deposition into the crop supplies and also waterborne pollution going into the crops. So there have been cases where, you know, even with organic food, but more commonly with commercially produced foods where the fruit and vegetable supply has a lot of metal toxic in it.

Then if you eat animals, you know, they eat the plants and they actually bio concentrate the metals too. So there's, there's many, many sources and tell patients, you know, we, we eat and drink water hopefully every day.

So think about that as a chronic long term exposure, it's, it's pretty persistent and then you can, you know, widen that out to your air quality and, you know, any number of other exposure places. – [e] I want to just jump on that we'll get is um, the example I like is the high mercury fish.

So the, the tuna swordfish, Maki, Maki, Chilean sea bass. If you think of the 600 to 2000 pounds ahi tuna sushi, tuna, it has to eat a lot of little fish to get that big.

And every fish has a lot of mercury. And guess where the accumulated at the most obviously is the yummy ist part, which is the true Toro, the fat, which we do a lot also. So, no, we used to do, we don't do that anymore. We human beings accumulate toxins in our way.

We don't need a key tuna anymore. That doesn't go for other tuna. But the big tunas, uh I just wanna make sure from an audience point of view that people really get, this is significant and the higher up in the food chain you go the more concentrated. – [w] Well, one serving of that True Toro is enough for like six weeks of exposure, but some people are eating it every week, every day, every week. And so if you're someone like me with terrible detox and celiac your guts, I'm asking, you're not detoxing it.

So it builds up. But I have a question. Have you thought at all, Paul or have you done any research into what's the impact of wildfires and forestry burning? Because I know that that forests will sequester a lot of mercury and when it's burned that gets airborne and then ultimately believe it winds up in the oceans. Have you seen anything on that?

– Yeah, that's, you know, that's another, uh, certainly more in the news anyway, the last few years and we, here in the northwest, I live near Seattle, so we're near the water. We've had a lot of wildfire so that we've had to look into that for patients quite a bit, um, airborne sources when, when anything burns pretty much any organic thing that would burn.

But especially forests. Uh if, if you consider the analogy of, you know, just the vegetables, you know, getting from the air and they get a little bit metal toxic, think of these big trees and, you know, their, their limbs are out there to try and collect water. But of course, it's also going to bring down all sorts of toxicants. So they, they're big bio concentrators when they burn, not only they put off unfortunate gasses that are not great for us, but they aerosolize the metals and those go around.

Um, it's, it's a bit of a maybe curious analogy, but one of the often overlooked sources of real high mercury levels and patients is if they live anywhere in the area of a crematorium, and often people don't know that.

Um And so when you, when you burn, you know, many things, human bodies, for example, but um when you burn, you know, anything that's been bio concentrating, it does go up in the air.

And so the crematorium, you know, analogy is well known to the government regulators, etcetera. But if you imagine just that one source being able to tox, if I, a part of a town, think of a forest fire, you know, um, that, so that's another huge area. And as you said, you know, if it doesn't settle in the air, in our lungs and everywhere else goes to the water and then, you know, the the aquatic life that we might get another dose of it too.

– [w] All right, if you're listening, raise your hand, if you're thoroughly depressed, okay, let's convert this because it's

fixable, right? – [e] I have a question because I want to. This is my personal.

Do you know, brace yourself that I have a lot of patients that why does, why is there so much thallium in um California soil? Like a lot of people that eat the organic, um the brassica family, uh broccoli and Brussels sprouts and all that stuff and eat only organic.

The thallium is way high. Do you know why? What, what's the deal with California soil? That, yeah, – It's um it's accentuated in the southwestern United States and, and there's some environmental reasons for that, but it's also been increasing since safer Fukushima, etcetera.

And one of the things and this is actually kind of a curious timing. Um I'm working with a couple of chemical engineer, friends of mine who are also physicians. So they, they broke away from the chemical engineering world and decided to become doctors, uh a lot more fun, I guess. But um we've been looking into um degradation products from, you know, radioactive isotopes. And what will happen is over time, depending on which isotope it is. You might start out as one thing, one, you know, one metal, one uh ion and it will degrade to other metals over time. And so these are many of the ones that we see people toxic with, well in the areas, um especially west of the rocky mountains, there are large portions of the United States in the western part that naturally have a lot of uranium in the, in, in the rock tables, you know, in, in the ground.

And over time, the thought is that that's that and volcanic deposition of all that rock and the uranium and everything has sort of blanket in certain areas in California and parts of Mexico are certainly a big area for that.

So that's probably one initial source.

Reducing Exposure Through Diet and Environment

Uh And then, uh you know, if we go back to Chernobyl and we know that, you know, that radiation cloud circle the earth a number of times and Fukushima, etcetera, we're just getting more and more of that sort of uh you know, plant toxicity. Of course, we get it too, but it's, it's not uncommon at all now. Um to see higher levels of thorium and thallium and uranium than, than we used to. There's two other things I'd like to say because I think they're very clinically relevant.

Um, one is, I have had a fair number of military veterans who have been deployed to the Middle East. And so in addition to the burn piles and, and the petroleum burning and all of the stuff that goes on there, uh, universally, I've never tested a single combat vet who was not a lot higher than the average population in America and things like uranium because depleted uranium, you know, in, in weapons, etcetera.

So that's very common. The other thing that we're seeing now to were talking earlier about leaded gas and it's been gone for a long time. Uh you know, those of us now who are over 60 and who grew up during a time when we were getting exposed to more lead in the environment.

Um now what's happening is we have sort of an auto intoxication in bone release of, of heavy metals. So lead is a big one. Thallium is a big one. Thorium is a big one and some other nasties that, that go into your bones.

So, so it's sort of a newer thing that we're training people to do is to before we start to aggressively remove metals and of course, you want to remove them from your diet and everywhere you can. But before we, you know, kill it, your detox, you wanna make sure your bones are stable before we do that.

So that, you know, your bones will keep giving back heavy metals to as your bone health goes down. So, so that's another place where it comes from. You could have been exposed, you know, 40 years ago to something and it could be happily in your bones until your bones get a little less stable.

And that'll, that'll do that too. -[e] All right, now, go back to your happy place, – [w] Happy place. So, so what are the things that you, that people can do to? I mean, it seems so, I always think of this, what are the ways that you're, it's around you?

What are the ways that you're putting it in you? And are there any ways that you would put it on your body? That seems a little less, it's really around you and in you, how do people minimize their exposure or eliminate it?

– Yeah, I think the biggest hammers that you have there to drive that forward are um food and water. And so, you know, although it's kind of a global recommendation, we will have patients take a look at the environmental working group's list of, you know, the dirty dozen, which is now more than a dozen foods that are heavily contaminated.

Um We'll also have people look at, you can get from the, it's one of the government agencies, you can get maps of exposure areas and, you know, endemic things like uranium and stuff. So the first thing is to know your environment, know what's going on there. So, removing everything that you possibly can either filtering your water or making sure that you drink and uh cook with, uh either de ionized or appropriately filtered water is very, very important. But food is such a huge source.

That's, you know, that's sort of the biggest thing. The other thing that in my, you know, more sensitive patients who are probably, you know, up to here with toxicity, we try and make sure that they have air filtration, um especially in, in the bedroom because you're kind of your static there usually and you're, you're there for 6789 hours. And so you, you have a lot of that going in. So having air filtration, at least in where you sleep can decrease the amount that you're getting.

There is exposure, depending on your water supply, there can be exposure through shower, you know, and bathing. Um which you would think, well, it's external. How bad can it be?

Um You can actually get enough over time again, it's repeated exposure. So, you know, for people who have either maybe wells or city water, that's not, uh that's not great and clean will recommend either house filtration or you can get pre filters for your showers. So there's a lot of ways that you can, I don't think you can ever totally avoid it because the world is a pretty polluted place, but you can really diminish it by you know, by those chronic exposures every day, um, water food, uh, and then air. – [w] I have another question.

So, talk to me about, when you talk about food. Are you saying eat organic because it's got, like, how do you know that your food doesn't have heavy metal contaminants in it because you're not going to test every apple?

Or are you going to presume that if you're eating flesh that you're getting heavy metals? Like, how do you suss this out? – Yeah, I think, you know, the only way to know these things for sure would certainly be to test everything. But there have been enough wide scale, you know, testing procedures done in, you know, food science, etcetera to know patterns. And so if you look at organic food sources versus commercially grown food sources, there will generally be still some toxicants in organic food, but generally it be enough lower where it will make a difference if you're eating that every day. Now, we do have people who say, look, I, you know, I'm feeding seven people at my house and, you know, I can only afford so much organic food. So we will have them at the very least.

Look at the dirty dozen list, which is dirty dozen plus three now and at least get those as organic. But if you, the more you can do the better, it's the same with animal products.

Um, animals are bio concentrators and so, um, organically raised etcetera. Animals are going to be lower but not zero. Um And, and with a very few exceptions, that's, that's a pretty reliable difference that, that organic will at least give you lower amounts of toxicants than commercial food.

– [w] What about the bones from either organic or conventional grown flesh when you take those bones and make broth with them? Are you now leaching out the lead into your broth? Bliss. Knowledge is power.

Let's land on the knowledge is power side of that. – Yeah, this is been a big area where I have looked quite deeply because I our family does a lot of bone broth and that sort of thing that, that I make. And so it's kind of the same pattern.

We try our best to get, you know, organic sources of the poultry or whatever the meat is that we're going to do and then the bones come from there. You still are going to have some metals released even from or organic, you know,

organically raised animal bones. But it's gonna be a lot less uh than commercial or feedlot type of animals and what they would have.

And there's actually been some studies done on that, not a not a lot of them, but some that basically show things like lead that would be in the bones of the animal are certainly going to go into the bone broth.

So I just personally, you know, because I am, I am the bone broth maker. Um, I source, we have a really great organic co op and, and some organic farms near us and we just source as much organic as we can.

It will be a little less if you're doing poultry because they're smaller animals and they're not going to bio concentrate as much than say, a cow that lives longer and it's a lot larger. Uh, so that, that plays into it too.

– [w] So, what do you recommend? Did you have a question? – [e] I'll just go safe. Do you raise your own chickens and used to? – Yeah, I used to. But where, where I live right now, it would be difficult.

– [w] That's, that would fall into the, not in my backyard. You can't do that. Okay.

Supporting Detoxification and Safe Supplements

So, so what for people who say, okay, I'm clear, I'm getting a higher amount of exposure than my body can process or I already have and I'm struggling. What are the ways to, what, what can people do if just avoiding it's not enough?

What do you recommend for people? – Yeah. So, so there's a couple of levels then of metals going into the human body and then the pathways they might normally take to get out just naturally now, like I said, we, we don't really have detoxification pathways for most heavy metals because our body didn't evolve, you know, with, with them as a factor. Really, they're kind of a newer issue at the levels we have now.

So, and, and this actually goes to our earlier discussion and, well, the toxicologists kind of look at it this way and environmental doctors kind of look at it this way. Um, I, I used to have a practice right next or really near to a battery factory, a car battery factory.

And those folks were always having their lead tested and the lead would go up. And I would say, well, what do you do when your leg goes up? And they said, well, the, the company doctor just says, we'll get out of the lead processing area. They put them on different work for six weeks and then their lead goes down.

And I said, where did they tell you the lead goes? And they said, well, it's, it must be gone and it's like, well, no, the lead goes in. And especially in an instance like that or if you have a foodborne source, we only can naturally kind of eliminate through our kidneys, mostly a tiny amount of the metals we get exposed to every day.

So if there's always more going in than can go out, it's the difference we have to worry about. Now, there are things that can help. So your kidneys through the lion's share of the removal, although your liver and bile through the gallbladder or another way out for it.

So, naturally speaking, um things that assist your kidneys in really proper and appropriate function of, of, of the net franz is number one alphabet. Poke Acid is very useful for that. Uh, common supplement that's used in detoxification, etcetera. It's, um, it's, it's a relative of some of the cell free the calculators. Uh It's, it's only one Thile, so it's just got one arm. But what I would tell patients is it, it kind of pushes metals a little bit out. It doesn't really bind to them.

But my podcast, the other, which you can eat the best way to get it and then you can also supplement and we're learning more about that is curcumin turmeric.

It turns out that in the fatty membranes and in yourselves, the curcumin actually is better at getting metals out of your mitochondria in yourselves and your nerves and your brain and all that than anything else really. So things like

that, that help the system, just keep the stuff going out because you figure there's cleanest life possible, there's gonna be some coming in every day.

So we want to keep it going out through the kidneys and maybe the liver gallbladder. – [w] What kind of curcumin Paul just to interrupt? Is there a particular form just like with CBD?

It has to be the whole full spectrum or it's, it's every company has their own, right? Everyone talks about the best. – The interesting thing in any of the studies where they've actually looked at that is they never, um mostly they didn't use anything special.

Some were dietary turmeric, which is, you know, not supposed to absorb very well, but you will absorb some of it and a lot of it was just plain curcumin without a lot of, you know, the high speed additives. So I usually use a curcumin, either that Scott, you know, the, the pipe here in the pepper extract in it to help it absorb or there's some other ones like that. Um Just clinically speaking, figure the, the better it gets in the, you know, the better it's going to help you.

Um But that, that's something that certainly, you know, people, especially if they already use it in their, in their food, that can be a very big help. But I think I'll flip OIC acid and procurement as far as actually moving metals and helping them leave the body huge.

The other thing that's really important is, and we didn't really get into this earlier. But another nasty thing that metals do is they raise the amount of pro oxidation and while we need some oxidation to do things like have immune function, we don't want it to always be on the pro oxidant side and metals definitely alter your, your oxidation reduction status. So things like simple things like vitamin C are very important just to support the process of, you know, keeping yourself healthy while the stuff is leaving uh and then glued with iron.

You know, those are all kind of basic things. They're not really, they're not calculating, but they're helping your body deal with the metal and helping it remove. The final thing people will not kind of think about is we always try and get people, uh you know, eating hopefully enough enough fiber. Uh So that uh if they do dump things, which we do every day in our bio toxicants that they'll just be bound up and leave as well.

Um So those are, I think the kind of the non medical, non interventional things that I usually try and get people to do beyond avoidance. – [e] We're just like modified citrus pectin. Go into that.

Have you had results or so modified citrus pectin um can be very useful as um as a protectant and, and eliminate, eliminate Torrey uh you know, product, it's um it's similar to, you know, once, let's say you've got enough fiber, etcetera in your diet, but you really want to add a bit more because maybe you're actively detoxifying, modified citrus pectin is one that can be used and then there's other, you know, supplemental things that could also be added.

Um The thing with modified citrus pectin, that's nice. Is it affects both your G I tract and systemically. – [e] Yeah, cool. – [w] I love this. So the I guess the last question I would have is if someone is not under medical supervision for this, do you have an upper limit of normal or an upper limit of intake for the things you've talked about to say, don't do more than that? Or is it really don't do more than you feel good? Obviously, you're not recommended.

Hold on, let me back up. This is not medical advice. Is it just hypothetically speaking, if one were to take it, are there any ways one could harm oneself with the things you talked about?

– So, um, always a good question. So generally speaking, the biggest harm, say from vitamin C would be getting loose stools or diarrhea. And that's usually how your body tells you you've maxed out on vitamin C.

Um oral vitamin C is incredibly safe and it's water soluble and we humans don't make vitamin C. So we need some every day. But if you notice that you're getting g I upset or loose stools, it's time to maybe back off alpha lipoic acid, generally, you know, most of the um what we'd call the, the typical al fly poke acid, a race, ethnic mixture.

Most people and most of the studies, you know, they're taking somewhere between 508 100 mg, you know, on a daily basis. And those levels are certainly appropriate for helping detoxification. If you took too much of like poetic acid, it's um it has a fat soluble component and water soluble.

Um you could potentially build up, you know, maybe too much, but it takes quite a long time, pretty safe for you and a lot of places in your body will use it. Your mitochondria are supported by it and many other things, curcumin, um curcumin is incredibly well tolerated.

There's, you know, there's potentially one of the botanical or, you know, plant substance that has the most research studies behind it, at least published ones.

And most people, the upper limit of what they can take has more to do with what they can afford to buy more than, you know, the dose itself. For example, in cancer research, which is unique, but it does show with humans.

Um we would give people up to 4000 mg intravenously and most people won't take anywhere near 4000 orally. Uh And, and we never had any, any of the problems that they said that people would have with that. So curcumin is pretty well tolerated.

Testing for Metal Burden and Interpreting Results

If you look at the population studies in areas where they eat a lot of tumeric, the doses are quite high and pretty safe unless you're allergic to it.

Um And then glutathione again, uh water soluble, your body has a really elegant way of dismantling it if you have too much and it will use the amino acids for other things. So it's sort of like curcumin, the upper limited doses, usually more affordability than anything.

– [e] So, all right. So we talked about supplements you can do on your own. Let's say one of our participants are interested in saying, looking at what is my load, what should they ask their physician assuming they're open to it? What kind of tests are best or what are the, what are the different maybe grades of? Okay. We start out with the blood lead and mercury.

Regular quest lab, bloodletting mercury. What's kind of, what are the levels different tests that we, that our participants can ask for? – Yeah. So again, you know, people need to keep in mind and it's not a negative comment about their family practice doctor, whomever it's just their training doesn't include very much beyond maybe lead and maybe mercury in the blood. If you go to your family practice doctor, that might be as far as they go, they do a whole blood lead and mercury and that's okay because there are standards for that. The problem is that what will print out on say lab core request will be um a uh usually a world health organization, you know, level which is super high.

Uh The normals are, you know, way above now with lead, they've lowered it because of all the water supply issues. But that doesn't mean they're going to do anything about it if you're above that.

So blood lead mercury is not uncommon. There's nothing wrong with getting those. The C D C has a database called N Haines N H A N E s. And what we always recommend that people do first is to get a non challenge meeting. Just a random or first morning urine have a urine toxic metal panel done and then uh instead of comparing it to the laboratory normal comparing it to the cdc nhanes because those data are collected over tens and tens and tens of thousands of people. It's all random urine, it's not 24 hours, none of that. So it's easy to do.

And if you look at NHANES because it's normed to the whole population, you, you will often see just on a non challenged urine, toxic metal panel that you'll have NHANES, normals that are up in the 75th 90th or above the 100 percentile. The reason we have people do that now in normal to those CBC values is if you are being exposed in your water or food or if your bones are breaking down and, and that's the reason for it, it'll show up there.

And so before we aggressively say killer, trying to remove the metals, we want to get rid of the supply part of it, you

know, get it out of your food supply or your water or make sure your bones are stable.

If they go to the next step then and want to do um, you know, medical procedure, circulation, whether that's oral or intravenous, then we uh we'll take that previous test with no key later and look at that as a baseline, we'll give the key later. We're going to use medically as a treatment and then we'll test the person after that and that definitely needs to be um, a doctor who is trained in environmental medicine in some way.

So I think the, the listener needs to understand if you go to your, again, your, your primary care, they're unlikely to do much of that sort of thing because that's treatment orient.

– [e] But if you find your friendly neighborhood integrated functional medicine doctor right around every corner, uh ask for the provoked first, the non provoked test and then go towards the provoked test.

– [w] Paul. This is awesome. Yeah. – [e] Is there, what else is there anything else that we should have? Our listeners know that um anything we didn't ask you that we should ask you before we ask, tell them how to find you. – All right.

Yeah, I think just a couple of big picture things. So I think we did a good job kind of framing why they're bad for you and you definitely need to deal with your ongoing exposures, especially food, water and air.

Um I think the big things I've seen clinically, especially in the last 10 years that are really good to kind of just remind people because you have this in your head if you're detoxifying.

Uh one is this issue with bone breakdown. And um that is becoming more and more of an issue because you know, as the generation that was heavily exposed to lead now gets older and our, our bones are turning over, we're auto toxic fine and it doesn't mean you can't detox if your bones are, you know, not imbalanced just means you need to do some things to get your bones settle down and, you know, the bone turnover working appropriately.

So that's one big thing, the next one and this is just human nature. But as a patient, you know, and as a human, you want to think, okay, I'm gonna treat this particular problem, but it's not really like treating a strep throat where I'm going to take a course of a drug and, and be done with the strep throat. Probably this is an ongoing, you know, process and our body, there's no way to know what's on the inside.

Our total body burden, there's no way. So your body will maybe your first test shows. Oh, you got a lot of these three medals and you're working on detoxing those key leading, etcetera. Well, you might test three months in and those three are going down. But now there's another three that are coming out because maybe, you know, they've been stuck inside your liver cells or somewhere else and your body's giving more. So I was trying to get people to think this is more of a lifestyle change. And yes, the detox inoculation may be a little more intense in the beginning, but long term yet, yes, we're going to avoid coming in uh into our lives for food and water and air.

But also the detoxification process needs to be kind of part of your lifestyle after that.

Long-Term Detoxification and Closing Remarks

And it may not include a hardcore thing like collecting, but it will include keeping the doors open. So your body eliminates it. And I think those are important things because I've even had this with students where they'll say, well, I, you know, I got to X number of treatments and shouldn't all the medals be gone.

No, that's not how it works. Um You know, we, we are a reservoir for a long time. So I think the the idea of a lifestyle of, you know, detox is a better way to look at it. – [w] It's a journey, not a destination, destination would be nice if you got it, – But it would be wonderful if we could just boom and yeah, – [e] I always think we should just get a big magnet and just pull out.

Uh But yes, that would be cool if it worked that way. – [w] You could just kind of like, yeah, – I'm sure on Star Trek that, you know, the Tricorder thing probably could do that.

We don't have those. – [e] Are you working on that yet? – I used to joke with patients as soon as we had that it would be easy. – [w] But when I did OB people would ask when is my baby coming?

I said if I knew that I wouldn't be doing OB Superwealthy just predicting. – [e] No, but I think you bring up a point that some people for the big stuff can be done in six months. But some, but most of us are years in the making and it is a lifestyle. So I think that's a really good point because expecting, expecting quick results. Unfortunately, it's just not, it, especially as we get older, it just takes time. – [w] Didn't you?

Wasn't it? You who said to me that the eastern philosophy was that it takes just as long to untangle an issue as it did to make that ball of wax and, and so. – [e] That's, that was true then, but that was without toxic.

And so I think it might be. – Three times as long. – [w] Okay. Now we have to end on a hopeful note, people this is you're not standing in the script here.

So we got to go back to sunshine and rainbows. Ultimately, people get better, it could get better. – And then I do think it's also important to say, you know, we've all done this for a long time and definitely as people move through the process of detoxifying and decorating, you know, moving things out a lot of other, you know, we were talking about how it affects so many downstream things.

I've had people need less medication. I've had made less hormone doses. I've had them, you know, improve their blood pressure. I mean, all sorts of very big benefits from getting these things at lower levels in your…

– [e] Autoimmune disease. – Yeah. You know, even the markers for auto immunity drop often, right? I just don't want to emphasize that you don't have to be at zero to get those benefits. – Right. Right. Right.

Right. Okay. – [w] Thanks for bringing back the Sunshine and Rainbow those boys. So, Paul, I know people are gonna want to know, how do they reach you? How can people find you?

– Yes. So, I, I tried to make it easier last year. Um, there is a website, it's D R A like Dr A and then N O W, DrAnow.com and that's actually hub website. So it's got, uh you know, my youtube and my books and, and if you're a professional, that's got a link to the professional stuff and newsletters and all of that.

So DRANOWcom. – [w] Amazing. Thank you. Thank you. So for the listeners. Thank you for listening to another episode of the Environmental Toxicants, Auto Immunity and Chronic Diseases Summit. Our guest today was Dr. Paul Anderson and as I mentioned, he's Wickets Matt. So I hope you enjoyed the interview.

Thanks for being here, Paul. – Thank you.