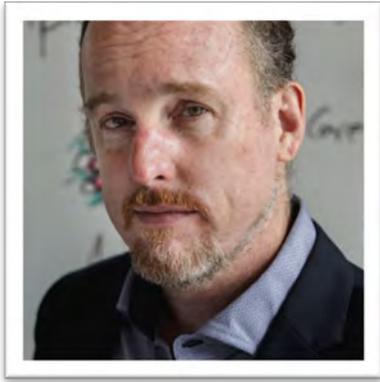


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## **Brain Defense – What to do About Heavy Metal Toxicity**

Guest: Christopher Shade, PhD

*The purpose of this presentation is to convey information. It is not intended to diagnose, treat, or cure your condition or to be a substitute for advice from your physician or other healthcare professional.*

**Jonathan:** Welcome to the Alzheimer's and Dementia Summit! I'm your host Jonathan Landsman, creator of NaturalHealth365.com. Did you know that every three seconds someone gets diagnosed with Alzheimer's or dementia? In fact, Alzheimer's is the sixth leading cause of death, kills more people than breast and prostate cancer combined. And Western medicine fails to offer a solution.

As a health and fitness consultant for nearly 30 years, I believe Alzheimer's and dementia are the most misunderstood, cruelest, and costliest of all diseases. That's why I created this summit, to help you prevent, slow down, and reverse cognitive decline before it's too late.

Our show today, Brain Defense: What to Do about Heavy Metal Toxicity. Our guest, Dr. Chris Shade, obtained his bachelor's and master's degree from LeHigh University in environmental chemistry. Dr. Shade earned a PhD from the University of Illinois, where he studied the environmental and analytical chemistries of mercury, as well as advanced aquatic chemistry. During his PhD work, Dr. Shade patented analytical technology to analyze mercury, and later founded QuickSilver Scientific.

Since then, Dr. Shade turned his focus to the human aspects of mercury exposure and the human detoxification system, researching and successfully developing a superior liposomal delivery system for the nutraceutical and wellness market, and also specific clinical, analytical techniques for measuring human mercury exposure. He used his understanding of mercury

and glutathione chemistry to design a unique system of products for detoxification that repairs and then maximizes the natural detoxification system.

Today, we'll focus our attention on the ever-present dangers of heavy metal toxicity on the brain and the rest of the body. But more importantly, you'll learn exactly how to go and safely clear away one of the greatest threats to brain health.

Please join me in welcoming Dr. Chris Shade to our program. Dr. Shade, welcome!

**Chris:** Thank you very much, Jonathan. It's always a pleasure to be with you here to educate people and expand our knowledge base.

**Jonathan:** Dr. Shade, you're considered a leader in the field of heavy metal testing and detoxification. Talk about your background and how you got so interested in this field.

**Chris:** Oh, sure. Well, you almost have to go back to my pre-science past to know why I like natural health so much and why I bring a good chemical mind to it. And originally, I had this rebellion against reductionist thought. I was raised by a professor in an academic household. I was a scientist and I just started to reject all that and literally went back to the land. I became an organic farmer and learned so much about how the interconnection between all the different systems and nature and how that creates health.

And then life just had its way of pushing me back into scholarly activities and back into grad school. And it wasn't my intended path. But I ended up doing a PhD in mercury chemistry. And I learned these new techniques of mercury analysis. I developed systems for separating different forms of mercury.

And then it was natural for me, once I did that, to turn back to how to apply this to the human body and how to work with the human body to get it to get rid of metallic toxins. And I came, as I moved into integrative and functional medicine, I came to see how devastating toxicity can be to, not just the body, but to the mind. And so that's what brought me here.

**Jonathan:** Dr. Shade, I know we live in a world that's often said to be filled with so much hype. But I just want people to appreciate what a brilliant mind you are, what a great gift you are to the natural health world, to really get

such an easy understanding about what's going on here, the dangers with heavy metal toxicity. We need more people like you who are intelligent understand everything about biology and chemistry really to unravel all of these mysteries.

We know that heavy metal toxicity is a growing concern. More and more people are becoming aware of it throughout the world. What are the physical, mental, and emotional signs that we have become toxic with these metals? Talk to us about it.

**Chris:** Oh, sure. And metals are really insidious because they come on to you very slowly. Very few people have the experience of what we had during the Industrial Revolution, where you're exposed to lead and cadmium in a battery plant and grow sick over just a process of a period of weeks.

We're accumulating toxins over years and years. And these metals are building up. I work mostly with mercury. And mercury from dental amalgams and food is building up over the course of years. And it slowly eats away at your vitality.

Now, what do I mean by vitality? One of the primary targets for it is the mitochondria. And in the mitochondria, you have special enzymes that are made to deal with the reactive oxygen species that are always present in the mitochondria. But they do this at the expense of becoming more sensitive to damage from heavy metals. And the main metals that affect the enzymes in the mitochondria are mercury, cadmium, and arsenic. So if they're poisoning your mitochondria, you can no longer make ATP.

But what's worse than that is that as you're trying to make ATP, when these metals are damaging the control systems in the mitochondria, you no longer funnel all that energy into ATP. But that energy has to go somewhere. And it goes into production of more destructive free radicals, which are leaked out into the cell.

So you have this initial loss of energy. And there could be eventual damage to your adrenals as you try to work on adrenal energy instead of cellular energy. And you wear out your adrenals. And so it's systematically creating a depression in the body. And that's a physical tiring depression.

But it's really important, now that we're talking about Alzheimer's, that we look at that manifestation, how that's reacted in the brain and the toxicities

that happen in the brain. And it's just stunning. I was doing my homework and refreshing my memory on all the things that go into Alzheimer's. And I was just shocked what the overlap is between mercury neurotoxicity and Alzheimer's.

For instance, in Alzheimer's...In fact, I was looking at Rudy Tanzi's page. Rudy Tanzi's a brilliant researcher from Harvard. And the first thing that pops up there is glutamate and NMDA receptors are hyperstimulated. There's an excessive release of glutamate into the synapses. And glutamate causes neuro excitotoxicity, which is killing the neurons.

Well, that is exactly what the toxic manifestation of mercury in the brain is: exaggeration of the glutamate system and the NMDA receptor. You have acetylcholine deficiencies in Alzheimer's because you're losing the cholinergic neurons. And this also happens in neurotoxicity for mercury and other heavy metals.

You have an uncontrolled inflammatory response. Ellen Silbergeld at Johns Hopkins wrote a brilliant paper looking at inflammatory response in a body with high and low mercury. And when there's high mercury, you have this inflammatory response that's supposed to be countered by an anti-inflammatory release of cytokines.

But it doesn't happen. All you release are the proinflammatory cytokines. And this results in a more damaging inflammation, not the controlled type of inflammation we have. And when you look at Alzheimer's, inflammation is the primary cause of the damage in the brain.

In fact, in Rudy Tanzi's work, this was just mind blowing for me, I saw him speak. Mark Hyman, I called him because I knew he was there and I had a product for him. And he said, "Come down to this talk that Rudy Tanzi's giving." And he was talking about Alzheimer's.

And he said, "Yes, it is the neurofibrillary tangles and the beta amyloid plaque. But they are not the thing that causes the dementia alone. You can have people with the tangles, with the plaque, and have a fully functioning brain. It is when those plaque lesions are coupled to an inflammatory response that you get the Alzheimer's reaction. And what is that inflammatory response coming from? It's coming from chronic low-grade infections in the brain."

Now, I had just been talking with Steve Frye about the microbiome. Not the

microbiome of the gut, the microbiome of your vasculature system. Your blood vessels have microbes in them. In fact, Steve Frye had done a paper where they pulled arterial plaque out and they found living in it a biofilm-forming community of parasites. And now, it seems that that's extending all the way into the brain.

Now, to come back to that chronic mercury toxicity analogy, look what happens when you have chronic mercury toxicity. There's a lowering of the glutathione system and a consequent lowering of the interferon levels, which makes you susceptible to having chronic, recurrent, low-grade infections.

The most common ones that we see in people with a lot of amalgams and high mercury levels are viral infections of the herpes family. That could be herpes 1, 2, 3. The neurological herpes—herpes 6, of course, would come into play in Alzheimer's—but also, Epstein Barr, cytomegalovirus. And it's not just that. You also see people with chronic candida infections, chronic pulmonary infections.

You see how the development of Alzheimer's is almost like a plaque developing in the brain. And it has all the hallmarks of mercury toxicity. And then you trace that back to Boyd Haley's seminal early work where they were able to create neurofibrillary tangles by introducing mercury into neurons.

They were able to create glutamate excess by mercury inhibiting the glutamine synthetase, which would normally take glutamate out of circulation and move it into glutamine, the non-toxic glutamine. And so it was just stunning to look at how these things overlap and how we can apply the knowledge we have from mercury detoxification into Alzheimer's prevention and mitigating the symptoms of Alzheimer's.

**Jonathan:** Dr. Shade, already you've painted a very clear picture about how this is not just a disease of the brain. This is not just a disease where, "Hey, it's the plaque that's causing dementia or specifically Alzheimer's disease," and also how incredibly important it is that we question what could be forming these plaques, and on top of that, what could be creating the inflammation in the body that then generates these symptoms that we see people suffering with, even in their 20s and 30s: the brain fog. "Oh, I didn't remember something."

"Oh, that's okay. You're just stressed out. You must be tired." And I wonder, Dr. Shade, how many people are being overlooked when it comes to how toxic

their body really is. No?

**Chris:** Absolutely! I see this all the time. And nobody, when we're in our 20s, 30s, 40s, I've been through it myself. I've had those symptoms. I've been in inflammatory states where the brain just isn't working. And all of my young toxic patients are like that. They have Alzheimer's-like symptoms. Word recall is not there. Memory is not there. The fog is clouding everything. And where is that coming from?

So I do think that it is the constant toxic exposure, which is creating that tangle and the plaque, and then lowering the vigor of the immune system, which is allowing these secondary infections to come in. And then the whole system comes down. And if the brain is one of your weaker spots, then that's where you're going to feel that.

**Jonathan:** Conventionally speaking, Dr. Shade, I think it's a bunch of nonsense when we hear things like, "Oh, it's just a little mercury," or, "It's in the tooth in a silver filling, don't worry about it," or, "Oh, yes, we know that the food doesn't have like the best-only ingredients. It has some toxins in, as well. But don't worry about it. Your body can just get rid of all these things." And we keep hearing this, "conventional wisdom," tell us not to worry about it.

I've got to ask you, Dr. Shade, how do these metals get into the body and accumulate to such a degree, if we're not supposed to worry about these things?

**Chris:** Great question! The problem is that the body isn't functioning well anymore. We're under so much stress. A lot of it is self-imposed mental stress. You see what worry does, it switches you into sympathetic fight or flight mode. That makes you glutamate excess. That makes you high in cortisol. And that shuts down the things that happen when you're in parasympathetic autonomic mode. That means it shuts down detoxification and repair.

And when you are in those hypersympathetic stress states or when you are in inflammatory states, you shut off detoxification. And if you look at us as sinks, there is a leaky faucet above us, just drip, drip, drip. There's no torrent of toxins coming at us. There is a steady drip of loads of different toxins. And a lot of them are very synergistic. And they're all adding in together.

And our bodies just are not working effectively. And we're not managing our neurological, like our autonomic neurological structures, we're not managing

ourselves to handle it. And so we do have to worry about it.

We do have to worry about that every day inhalation of mercury from those dental amalgams. We do have to worry about all that mercury that's coming into the body from the fish that we eat. We do have to worry about sources of cadmium and lead. We do have to worry about arsenic that's coming.

We say, "Oh, we don't want to eat the fish from the top of the food chain because they have all of this mercury in it. So we'll eat all this shellfish, which are low in mercury." But now, they're high in arsenic and they're high in lead and cadmium. We have to worry about all of these things.

And along the fish line, let me tell you, Dale Bredesen, is one of your speakers, and I recently worked together on a patient of his who had early onset Alzheimer's, specifically from eating too much fish, specifically from mercury. He had one of the highest mercury levels I've ever seen.

And he had massive Alzheimer's-like symptoms at a very young age. And we were able, through a comprehensive detoxification and repair program, we were able to reverse almost all of those symptoms. And we're working on the last legs of it now. So this is very real. And it's very able to be intervened with.

**Jonathan:** This is the most important message I want people to take away from this. Yes, there's a lot of things to be concerned about, which is what you just pointed out, Dr. Shade. But it's equally important to realize that we have some powerful tools at our disposal that we can actually turn this ship around. That's exactly what we're going to look at very closely from this point forward with you, Dr. Shade. Can we test ourselves to see how toxic we are? What do you recommend?

**Chris:** Oh, absolutely. Here we do a variety of mercury testing and metals testing. We have what is called the Mercury Tri-Test, where we look at different forms of mercury because they're different in where they go and how much is a problem. For methylmercury from fish, we can accept a higher amount than the inorganic mercury from dental fillings.

They're both bad. But they're relative. And we have to look at them separately when we test. So we test those in the blood, is your main reservoir. We test those in the hair, is an excretion measure of methylmercury, and in the urine as an excretion measure of inorganic mercury.

But obviously, there's a number of other metals. And so we do a blood metal panel, which looks, not just at your toxics, which is super important, there we're looking at arsenic and cadmium and lead and even silver. I've had an experience where I've used too much colloidal silver and made myself toxic. But we get rid of that the same way we get rid of the mercury. And so we can quickly reverse that if you're using that as an antimicrobial.

But then very importantly, we have to look at the nutrient metals. We have to look at the copper levels, the zinc levels, and very importantly, see what's the ratio between those because high copper and low zinc gives you a synergistic toxicity. Copper is getting out of hand. And it's synergistically toxic with every other metal.

We have to look at calcium and magnesium and balance those. We have to look at the cofactor metals like molybdenum and lithium and chromium and have to make sure that those are all in order. So that's what we look at for the metals.

And, of course, then with the other toxins, like mold toxins, that's one of the worse neurotoxins and Lyme toxins. Well, we can't measure Lyme toxins directly, but we can measure Lyme.

So here in our metals world, we're going to look at a very specialized mercury picture and then a broad map of the other metals, both nutrient and toxic.

**Jonathan:** Dr. Shade, in terms of detoxification, I would imagine you can't just treat all the metals exactly the same. They must have different functions or play out differently once they're in the body. So I've got to ask you. Once we've determined that there is a problem, the body is toxic, how do we go about safely removing all of these different metals?

**Chris:** Well, it's even more important to say, "What is our defense against the metals?" And the old paradigm for metal toxicity was, "Wow! Pull the metals out and everything will get better." But what I'm saying is you were accumulating the metals.

And the metals were causing the problem because your own defense system, called the chemoprotection system was low. And when we increase the expression of the chemoprotective system, we will lower the toxic effect of the metals at the same time that we push those metals out of the body.

Now, fortunately, most of the metals will fit within that chemoprotection system. And the most important part of that is the glutathione system. So we need to get high glutathione levels. We need to get high expressions of glutathione S-transferase. That is the enzyme responsible for moving the metal off of the cellular targets and moving it on to the glutathione. And then we need high activity of the transport proteins that will move those conjugates out.

So the glutathione system is going to work on mercury, on arsenic, and on cadmium. It'll also work on antimony and nickel. And then lead, this system will block the negative effects of lead. But to move it out of the body, we need to bring in a little bit of chelator. We need to bring in some EDTA.

So bringing in EDTA and doing that chelation. Then, if we determine that's a problem, we're going to have you work with a practitioner. But some of the glutathione upregulation aspects, they can be done on your own. It's always better if you do this with the help of a practitioner.

But these substances that build the glutathione system, this just reads like a who's who of all the great nutraceuticals, things like R-lipoic acids or the polyphenolic antioxidants or sulforaphane. All these are able to increase expression of this system. And then when we want, that will help us increase glutathione. But we can go direct for things like liposomal glutathione to bring active levels of glutathione into the body.

And one of the things that I've been really, really pushing a lot is rebuilding membranes because membranes are so easily damaged by metals. I'll never forget. Early when I was doing my own detoxification, I got all of my amalgams out. And I was doing detoxification wrong. I was just trying to force the issue with DMSA, a synthetic chelator.

And I was feeling horrible. And once I closed my eyes and I had this vision of this metal exploding through my membrane and destroying my membrane, just tearing it apart, and it really represented what I was going through, and now all of our detoxification protocols feature bringing in a lot of phosphatidylcholine to repair the membranes and make them able to catalyze this transfer out of the cells of these toxins without being damaged.

**Jonathan:** This is a really powerful point you're bringing up, Dr. Shade. I know you've gone over this so many times throughout all of your presentations. But the bottom line is it's very important for people to

understand, who are in compromised physical conditions, that if they go with the Western mindset that more is better of something, and mobilize these toxins within the body, but they're elimination pathways are not working well, the membranes are not build up enough, boy, what damage they could really do to themselves. Is that fair to say?

**Chris:** Oh, absolutely. And I'm so glad that you brought up the organs of elimination. This is what I like to refer to as drainage. And that's movement out of the liver, through the bile, into the GI tract. Movement of the bowels and movement of the toxins into the urinary flow. All of these need to be working.

Drainage support needs to be established. If the kidneys aren't working, if the liver isn't working, if the GI tract isn't working, we don't want to provoke the toxins out of the cells yet. So we need to support the drainage. And then we need to support the membranes. And we do that together when we realize that somebody's compromised in this drainage pathway and they're really sick, we start just with drainage and membranes and antioxidants.

And then once we get them stabilized, then we move to upregulating that chemoprotection system. And that's when you're going to start pushing these toxins out of the cells into circulation. And, of course, you want all those organs of elimination ready when you do that.

I always teach that there's two aspects of detox: the cellular aspect of pushing from the cell into circulation, and then the filtration or drainage aspect. That of filtering the circulation out through liver, GI, kidney, and also skin. So all that needs to be lined up.

**Jonathan:** Dr. Shade, why don't we just break this down a little bit more. Keep it really simple for people so that they have a heads up before doing a detoxification program. Are there any factors that inhibit our ability to properly detoxify the body?

**Chris:** Well, there's lots of factors that can inhibit that. Probably the most quintessential one is inflammation itself. So when we have an active infection, we have too much inflammatory activity to detoxify because inflammation and detoxification are opposites because inflammation is usually part of your pro-oxidant response to kill invaders. But detoxification is an antioxidant response to clean things up when the coast is clear. So inflammation has to be controlled.

But then kidney, liver, GI, these are huge. If you have someone who's chronically constipated, it's going to be really difficult to detoxify them. You need to make sure that the bowels are flowing well before you start releasing all these toxins because most of them are going to end up in the GI tract. And if they can't get pushed right out, right away, they will just be reabsorbed.

The kidneys. When the kidneys have problems, and this is why the Tri-Test is so essential, because for kidneys to work for detoxification, it is not glomerular filtration. Everybody tests their glomerular filtration rate, the GFR. But that is not where detoxification happens in the kidneys. It is in the proximal tubules. And it's an active transport into those tubules that causes movement of toxins into the urinary flow.

And the only test I know of that looks directly at that is the Mercury Tri-Test, where we look at inorganic mercury in the blood versus inorganic mercury in the urine. And when there is damage, that's usually inflammatory damage to the proximal tubules, you'll see a high inorganic mercury in the blood relative to the urine, so high blood, low urine. When we see that, we know we need to focus on the kidneys first.

In absence of having that test, we say, "Well, you'd better do it anyway. You've got to give some kidney, liver, and GI support, and get that all running." We see a lot of people these days who are really blocked at the liver level. And, in fact, a lot of the people that you see that have adrenal fatigue, we've determined that the liver is stagnant. The bile is not moving.

And the bile is not just...Well, the bile is doing a couple of things. Bile is movement of toxins. The same transporters that put the bile acids into the bile tree from the liver are the same transporters that are moving toxin conjugants. So if you're cholestatic or failing to move bile, you're toxostatic. You're failing to move toxins.

But bile is also bringing glutathione to the small intestine. It is feeding the small intestine. And when that liver GI is not moving, you're starving the small intestine. When you starve the small intestine, you can't assimilate nutrients right. And then you can't feed your body. And then in our go, go, go society, we end up trying to drive the ship with adrenaline.

And then we lead to adrenal fatigue. So you've got to line up kidney. You've got to line up liver. And you've got to make sure your bowels are flowing. And you've got to make sure you don't have systemic inflammation. When those

are handled, then you can move into detoxification.

**Jonathan:** Wow, Dr. Shade, you've said so much, I'm sure you realize, in such a short period of time. Just truly blowing my mind. It's so important for people to understand that this is really, truly an individual approach and that you do have to work with someone that really understands this, not just someone, a doctor who can order the Tri-Test and check out the urine and the blood and the hair.

Because wherever the person is at, they might be toxic in one area or another, and then all of a sudden the test results change a little later on, it might be easy to interpret that as, "Whoa! This is really negative. The numbers have really shot up."

But at the same time, this might be a sign that the person is unclogging and the toxins are getting out and they're going out of the body. I think it's about really looking at how many symptoms the person is suffering with. Are they actually feeling better? Even though the numbers are going up, that might be an indication, I guess, that things are okay? But everybody on an individual basis. Right?

**Chris:** Absolutely. Having someone who understands this art is key. The numbers that you get are guidelines. They're showing you the state of the system. And, in fact, when I teach the higher levels of this, I'll teach you that the people with the lowest mercury, where it's below our detectable level, they could be the sickest.

There are states, especially when there's very poor methylation, they tend to have the methylation SNPs, the 6, 7, 7 SNPs, where they will lock all the metals into the cells. And there won't be anything in circulation. And an unskilled mind who doesn't take a history of exposure and doesn't look at the constellation of symptoms, might think that's good.

On the other hand, what you said, "We might see the levels go up, before they come down." And people will think, "Oh, that's bad." And there's a lot of ongoing saying we're draining on one hand. But we're releasing on the other hand. Sometimes the levels will stay stagnant. But you see the symptoms getting better. And so it is really essential to have somebody looking at this that understands detoxification and that art and the multiple processes that are all happening simultaneously.

**Jonathan:** Dr. Shade, I'm sure you would think that you're probably repeating yourself so much when talking to an audience for the first time. But it's probably worthwhile for us to spend a few minutes on just some of these warning signs now you have for all of us before starting a detoxification program. Talk to us about it, please.

**Chris:** Sure. Let's see. So how would they look at the symptoms, themselves? Okay. You have bowel stagnation. People don't like to talk...Functional medicine people always have a joke that everybody has the same answer when asked, "How are their bowels?" And the only answer they ever hear is, "Fine."

And then you probe them on it farther, and they say, "Look, I go to the bathroom every other day. It's fine." That's not fine. You should be going to the bathroom once or twice a day bowel movements. And if you're not, make sure that you take magnesium. You might need some herbal laxatives to open all that up and get that moving before you start detoxification.

One of the indicators, there's two main indicators that I see for liver and kidney. When kidney is not moving well, you'll see a lot of bloating. And the water bloating throughout the body. And that's an indication that you need to work some on the kidney. If you see skin expressions where you're breaking out a lot or there are rashes, that's an indication that there's a blockage in the liver. It's usually that the bile isn't flowing well.

If the temper is flaring, where you're easily irritable, that's usually an indication of failure to move bile, as well. It's a stagnation in the liver. So looking for these symptoms is really important, and addressing them before we upregulate the glutathione system and do the cellular detoxification. So those are some of the things that you can look to and that you can work on before you get into the real meat of detoxification.

But also, I did mention inflammation. So if you know that there's an infection that you have or suspect that there's an infection that you have, you should go to a doctor and have some antimicrobials before you get into the detoxification.

In fact, many, many people who started on the detox system, but just started feeling worse and worse, would go and have Lyme panels done and multiple infectious agent panels done. And they'll see they have background infections of mycoplasma and toxoplasma. They might have Lyme disease, Babesia, different viruses going on. And so once they went into the antimicrobial

therapy first, then they were able to proceed to detoxification. And detoxification unburdened their system. And the immune system is able to jump up and take care of all the rest of the infection. And the body comes back to homeostasis.

**Jonathan:** Dr. Shade, just to get a little personal, as we get into really looking at the fantastic benefits to the brain and the rest of the body for reducing the heavy metal burden that someone might be experiencing, I said I wanted to get a little personal. We could have a little fun with this.

But I sure as heck know I was heavy metal toxic. I was chemical toxic. I was everything toxic when I was younger. I had acne. I definitely had anger issues. It was on and on. I think probably the best thing that saved me, not knowing anything at all about what to eat, how to drink better, how to live healthier, was the fact that I was very physically active, really big into athletics. It probably saved me to some degree or another.

But now, eating better, taking so many of these high-quality supplements, thanks to people like you and your company, something funny when you mention stool that I think is worth mentioning, as a sign for people that they really got to work on their digestion and their elimination pathways to get these heavy metals out of their body.

My stool has definitely improved. When I go to the bathroom in the morning, it is a long bowel movement. The stool is really long. Like, it's funny. But I'm like, "Can that be coming from my body? I can't believe it." That has to be healthy with my energy better. My temper's pretty much gone away. My ability to handle stress is way higher now than when I was a kid. This has all got to be put together as someone that probably is processing toxins better now, than when I was a kid. Is that fair to say?

**Chris:** Oh, absolutely. And it's amazing. When your stool is working well, when your GI is working well, it seems like there's so much more that comes out of you. And when it's not working well, there's not as much that comes out. It's just like, "What's going on here?"

But I can really relate to these changes that happen when you're young. There was a very significant change that happened for me, regarding temper, when I was in my early teens and they started putting amalgams in me. I remember something happened. It was like a skipping record. This was back in the days of LPs. And I just, "bang," punched the wall and put a hole right into the wall.

And I started doing that. And it was immediately after I started getting amalgams in. And my mom cooked fairly well. But I really went out of my way to eat poorly and really was not taking care of myself. And looking at my genetics, I'm not a guy who can handle a lot of metal load. But I had it. And it really affected me negatively.

And my life changed so much when I got the amalgams out and detoxed. My ability to handle stress, my ability to work, all went up so much. My immune system went up so much.

But as one of the interventions that we don't talk about enough, it is stress. How we handle stress. And I got to say in grad school, before I got my amalgams out, it was not in my master's, but when I went on to do my PhD, I had the good fortune of being at a school with a Chinese tai chi master. And I learned authentic Chen style tai chi, which included a lot of meditation and very slow movement that put you very deeply parasympathetic.

And despite, the massive amount of mercury I was exposed to then, because it turned out that the building I was in was massively mercury toxic, they were an agricultural building, and when we measured the levels, they were just barely below OSHA levels for an industry, and I was massively mercury and mold toxic. But I was able to hold some composure through working on my autonomic nervous system.

Now, getting rid of those toxins and detoxifying took me to a whole world farther. But I just want to mention those aspects of my personal story because the metals really negatively impacted my ability to handle stress, my mental composure, and my immune system. Getting rid of the toxins greatly benefitted me in all of that. But work like meditation and tai chi, Qigong, and Yoga, are really, really important for us in this day and age, where we work ourselves too much.

And I'd mention when we are too much in that state with too much cortical, we are in far too much of a sympathetic autonomic state and we cannot detoxify. And that is something that is often missed is that neurological state that prevents detoxification.

And that brings me around to some of the things that I found are fantastic for Alzheimer's, but are also great for detoxification. And that's probably why they're good for both because they let the brain relax and detoxify. And those two substances are GABA and CBD. Cannabidiol—the non-psychoactive hemp

component because of its ability to block the excess glutamate, stabilize the NMDA receptor and GABA just because it is GABA. Both of those put you in the parasympathetic state that calms the mercury toxicity. But it also calms down the Alzheimer's toxicity. And if you remember at the beginning of this talk, they are very similar.

**Jonathan:** So the benefits to the brain, Dr. Shade, as you've already listed many already, but clearly going through a good detoxification program step-by-step safely in the right order of things, getting the elimination pathways going so that we're going to the bathroom right each day, staying well hydrated, building up our reserves, building up the membranes in our body, building up our nutrition, as well, so that we're really nourishing the body properly, all of these things, we're reducing inflammation in the brain. Other things, too, you want to mention?

**Chris:** Well, yeah. If you go back to that etiology of Alzheimer's, there's the plaque and tangles. And we're saying you could easily create those with the metals. And then there's inflammation sealing the deal. So how do we detoxify? We use anti-inflammatories and glutathione and turning up the elimination pathways. And there we can take the offending metal out. And the anti-inflammatories can quench that fire that's going on.

So the treatment for the two is really similar and, of course, bringing the phosphatidylcholine in to build those membranes throughout the whole body. And that's one of the beauty of using liposomes for bringing these nutraceuticals in, for bringing glutathione in is that we're bringing membrane support in at the same time we're bringing the nutraceuticals. And when we make those liposomes well and make them small enough, they should be able to get across the blood-brain barrier and deliver these things right into the brain.

So that anti-inflammatory membrane stabilizing, drainage upregulating, and glutathione building is going to take the metals out of the body, get the metals out of the brain, and help stabilize the brain against this pathological process that's going on.

**Jonathan:** Dr. Shade, real quick as we close out the program, we've used the terms liposomes, liposomal technology, this kind of stuff. So maybe you could just give us 101 education, if you will, for a couple of minutes, what exactly that means for these nutrients that you're putting together in this package, if you will. And then also talk about if somebody wanted to get your testing and

detoxification program, what should they do? Do they need a doctor's permission, all that kind of stuff?

**Chris:** Sure. Absolutely. Liposomes are really what keeps me super interested in everything. And it's really beyond liposomes. It's this lipid nanoparticle delivery. So let's just go with one of the basic forms of lipid nanoparticles to liposomes.

Now, the cell membrane is made out of what are called phospholipids. And if you remember a picture of the cell membrane, it's got what's called the lipid bilayer. And it's made out of phospholipids that have a fatty acid tail and a water-soluble phosphate-type head. And we can isolate phospholipids from plant or animal sources. So generally, it's plant sources like soy or sunflower.

We can isolate those phospholipids. And we can make basically little cells out of them, little spherical vessels that can encapsulate or entrap a nutrient. So if it's glutathione, we dissolve glutathione in some water. And we inject these phospholipids. They spontaneously form these spheres around some of that dissolved glutathione.

And then we use our chemistry and physics in the lab to break those spheres down to very, very small spheres, spheres that are small enough to be absorbed right through the mucous membranes, beginning in the mouth and then continuing through while you swallow it through the gastric mucosa and then in the upper small intestine.

And we're able to get high delivery of compounds that usually can't be delivered well, compounds that are either broken down like glutathione, by peptidases in the GI tract or altered and with poor absorption like curcumin. Now, these compounds can have a very high absorption into circulation. And when those liposomes are absorbed intact, the liposomes actually fuse with cell membranes.

The membrane component of the liposome, the phospholipid, gets incorporated into the membranes bringing membrane fluidity, bringing fluidity and stabilization to the membrane, while the nutrients that were in the liposome get delivered into the cell. So the liposome gives high bioavailability. But at the same time, the very substance the liposome is made of becomes membrane support.

And I have no end of my good words for what phosphatidylcholine and other

phospholipids like phosphoserine can do for the health of the body. So the liposomal delivery brings those into the body. There are some other variations of lipid nanoparticles that we use for non-water soluble compounds, things like curcumin and coenzyme-Q10.

And, in fact, I just want to mention now with the coenzyme-Q10, it might take on Alzheimer's. I see three main things. The D&D, that's detox and diet. And that's to take the toxins out and stop insulin resistance. A lot of Alzheimer's discussion is around insulin resistance in the brain. It's called type 3 diabetes, where the brain is unable to use glucose.

And insulin resistance comes from toxicity and oxidative stress. So detoxify and change your diet to a low-carb diet, that's the D&D. Then, the infection and inflammation, lowering inflammation with the anti-inflammatories, combating infections, both by bringing up your immune system by bringing up glutathione, or by using some antimicrobials.

And then lastly is the mitochondrial aspect, increasing the mitochondria health so we can make ATP. And it could detoxify. It can clear out plaques. And it can make cellular energy. And the best way to do that is with coenzyme-Q10. And the best way to get coenzyme-Q10 into your body is with one of these liposome hybrid nanoparticles.

And we're just trying to do some research now looking at brain uptake of CoQ10 because all the studies when they load CoQ10 into animal models, they can get very high levels in the blood. But they can't get it into the brain. And so a lipid nanoparticle has great data at getting into the brain. We just need to prove that the coenzyme-Q10 does get in there. But preliminary results with people in terms of their neurological functioning on the nanoparticle of CoQ10 has been super encouraging. So that's why we talk about that.

And then we have direct PC blends, where we reduce the PC down to its smallest spherical form called the micelle. These are 10 nanometers in size and are rapidly absorbed. We have straight soy and sunflower PC. But very excitingly, we now have a PC that has krill phospholipids incorporated with the sunflower phospholipids so that we bring the anti-inflammatory aspect and membrane stabilizing aspect of omega-3s, along with the phosphatidylcholine, omega-6-based phosphatidylcholines from the seed oils.

So all of these can be accessed through us. Some of the stronger detoxification remedies, the IMD for binding metals in the GI tract, the liposomal EDTA, or the liposomal artemisinin, these need to be used through a practitioner. Our testing like the Tri-Test, in some states you can obtain direct access to the testing. It's called direct access states. We have those listed on our website, QuickSilverScientific.com. Otherwise, you'll have to do this with a practitioner.

But if you really want to go a good job with this, you want to hook up with a practitioner. Get one of our larger detox bundles, which will take you through a multi-month process of pulling the toxins out and rebuilding. This is what we did with the early onset Alzheimer's patient and had great success.

As far as direct-to-consumer products, you can go to our website Pure Expressions. That's where we sell of the products that we go direct to the consumer, so visit us there and look for more information at QuickSilverScientific.com and PureExpressions.com. You can go to QuickSilver Academy for training videos. And you can learn more there and you can find a list of doctors that use our products and testing.

**Jonathan:** For those who are interested in some of the information that was mentioned in this presentation, I encourage you to listen to Dr. Mark Hyman's presentation in the summit and also Dr. Dale Bredesen. Many of the programs here, no pun intended, will literally blow your mind in terms of infections and how that role on the brain. Nutrition, how important that is, and some of the threats that we need to be aware of that are really a danger to brain health. Please take the time to listen to as many of these presentations, as possible.

Dr. Shade, I want to thank you so much for your time. And I want to thank our listeners for joining us today. If you would like a copy of this program, plus all the other presentations inside the Alzheimer's and Dementia Summit, simply click the banner you see on this page.

Thanks again for attending the Alzheimer's and Dementia Summit! Talk to you soon. Take care!