#647 ADHD, Brain Fog, Dementia Caused By Heavy Metals (And How To Detox) | Clark Engelbert

Dr. Wendy Myers

Welcome to the Myers Detox Podcast. I'm Dr. Wendy Myers, and on this podcast, we talk about everything related to heavy metal and chemical toxicity, the health issues caused by these toxins, and more advanced topics than you'll hear on other shows. We talk about bioenergetics, emotional trauma, and advanced biohacking. Today, we have my friend Clark Engelbert on the show. He's going to be talking about how heavy metals affect your brain, how to detox them, and a really good, in-depth show and evidence.

We talk about the research on the different metals like aluminum, cadmium, mercury, and lead, how specifically they affect the brain, how they contribute to dementia, ADHD, autism, and many other brain disorders. We talk about when and why there's a lot of hope in improving those conditions dramatically through detoxification and how to go about doing that with HTMA or hair tissue mineral analysis and doing mineral balancing by looking at your mineral levels on an HDMI and not just looking at your heavy metals, but we also look at your mineral levels as well to do a mineral balancing program that then pushes out and displaces heavy metals from your body. So it is a really, really good show today.

Our guest is Clark Engelbert. He's the founder and CEO of Nutritional Analytics, a health consulting service that specializes in mineral balancing and heavy metal

detoxification. He has worked with hundreds of clients. He started his company in 2019 and helped many reverse their chronic diseases. He's also trained hundreds of mineral balancing practitioners with his training program with Dr. Leland Stillman - HTMA Secrets. When he's not reading about heavy metals, he likes to play guitar in his free time. His favorite food is lasagna, and his favorite color is Lopez. So you can learn more about Clark and his work at nutritionalanalytics.com, and you can learn about his team, a practitioner program at htmapro.com. Clark, thank you so much for coming on the show.

Clark Engelbert

Thank you so much for having me. We've been trying to do this for a little while now.

Dr. Wendy Myers

Yes, I want to talk about why your brain is full of heavy metals and what you can do about it, because this is important. A lot of people are very concerned, obviously, about their brain health and avoiding dementia, and that's a very scary proposition. People should be concerned about it. But before we get into that, why don't you tell us what your background is and how you got into heavy metals?

Clark Engelbert

Yeah, my background is in nutritional sciences and biochemistry. I went to the University of Arizona and Boise State for those things. And then after that, I sort of fell into mineral balancing due to my own health issues, primarily mental health issues like panic disorder, anxiety, and depression in my mid 20s, and circuitous. I found my way into mineral balancing somehow while doing an internet search, and got into mineral balancing many years ago. And that basically solved my health problems in a really significant way. Eventually, after doing that approach and being on it for many, many years, I decided to work with Doctor Wilson, the guy who is sort of the modern progenitor.

Dr. Wendy Myers

I've met you through that. I've known you for like 15 years now.

Clark Engelbert

I know, right? We've known each other for 15 years

Dr. Wendy Myers

The mineral balancing seems like a long time

Clark Engelbert

I was on mineral balancing for a long period of time, and came to it through my own health issues. And then, I was so on fire for it after healing these issues that I'd had. I was on medications and all of that sort of stuff, so I decided to work with Doctor Wilson. He had a training program many years ago. I'm pretty sure you went through that as well. Yeah. He had a training program. I worked with him for many years and then started this business that I run now, Nutritional Analytics, in 2019, and have been doing that ever since. So, it is a combination of going to university, but then also working with Doctor Wilson and just realizing along the way that there's not a lot of good information out there on heavy metals.

There's a lot of stuff related to, quote unquote, detox of heavy metals, some of which is valuable, some of which is not really valuable. But I went down that rabbit hole trying to understand this topic more deeply and came across a lot of really interesting information. And that helped explain why mineral balancing works, and these other issues associated with metals essentially.

Dr. Wendy Myers

How do metals get into our brains in the first place? Let's just start there.

Clark Engelbert

That’s a good question. Glad you asked. To understand this idea of metals getting into the brain, we have to take a step back and understand, well, how do metals get in the body in the first place? They get into the body by mimicking your essential elements, your mineral elements. And this concept is called ionic mimicry. In the first place, at the level of your gut, the metals mimic minerals and hijack your mineral

absorption pathways to get into the body, essentially. And what happens after that occurs? And the metals mimic the minerals at the level of the gut, and once the metals are in the body, they're distributed and partitioned by those same mineral transport proteins.

The same logic of the minerals getting into the body in the first place, how they're moved around, distributed, and partitioned, applies to what happens when they reach the brain, and they reach that blood-brain barrier. The metals are utilizing these same mineral absorption pathways at the level of the blood-brain barrier to get into the brain, and so it's this metal's toxicology more broadly, but especially this issue of metals getting into the brain and causing issues with brain health, it's primarily an issue of ionic mimicry.

How does that happen? How does that process happen? We could talk about that. I think expanding on that concept from a more general perspective could actually help people understand this more deeply, but it's that phenomenon or that process of ionic mimicry. Why doesn't it make sense, right? Because metals are toxic at any dose. So it's almost like a mistake of evolution, and tracing things back to how metals are not perfectly excluded from the body is a very interesting conversation we could have right now.

Dr. Wendy Myers

One thing that’s also interesting is that I interviewed Doctor Stephanie Seneff. She's an expert on glyphosate, which is the herbicide that's sprayed on almost all of our food. It can even be on organic food. And she said that aluminum, like glyphosate, can shuttle aluminum past the blood-brain barrier into the brain. That's one of the main metals that contributes to so many different problems, including dementia. Why don't we talk about that? What are metals? What are they doing? Once they're in the brain, how are they harming our brain?

Clark Engelbert

Well, there are a couple of quite common mechanisms that all metals share in terms of their negative effects. They're all causing inflammation. They're all causing microglial activation. They're all causing glutathione depletion. They're all causing

antioxidant depletion. So there are common mechanisms that exist between all of the metals. You can start to make distinctions when you understand, like where metals accumulate and metals. Do you have a preference for where they go once they get past the blood-brain barrier? As an example, aluminum seems to preferentially accumulate in the hippocampus. What is the hippocampus necessary and used for? Long-term memory storage, essentially learning and memory. If aluminum is getting in there and causing all of these problems, inflammation and other issues, displacement of zinc is another significant aspect of aluminum toxicity.

You can begin to understand what diseases or what conditions will manifest as a consequence of that aluminum in your brain. Aluminum is primarily associated with Alzheimer's and dementia. And it's because of where it goes. It's because of it accumulating in the hippocampus.

Dr. Wendy Myers

What is the number one metal that's so problematic once it accumulates in the brain?

Clark Engelbert

I think it's by far aluminum, and it's maybe for a couple different reasons. But the primary one is that aluminum is more ubiquitous in the environment now than any other metal combined. It's because it's so useful for industrial processes. It's very cheap. The mining process has been refined. And so aluminum is used for jet fuel. It's used in vaccines. I don't know if I can say the word. It's used in anti-caking agents like in table salt which is used as an antifungal in the water supply. So aluminum has thousands of different applications across society. It's in the environment. It's in our background much more readily than all of these other metals.

I've done some looking into precisely the numbers and my own research has illuminated this a little bit, but it's like aluminum is used eight times more than all the other metals combined in industry. So we're exposed to a lot more aluminum now than we ever have been, even if it wasn't used that ubiquitously, we would still be exposed to a lot of it. But it's like those industrial processes really accelerate aluminum ubiquity in the environment.

Dr. Wendy Myers

How does aluminum specifically harm our brain? I read that it can kill brain cells, interfere in their functioning, interfere in the neurotransmission, and there's a lot of different ways that it interferes and so many different activities in the brain.

Clark Engelbert

I'd say number one is aluminum interacts with iron and calcium primarily also zinc but other minerals in the brain. And so we have to understand not only what occurs as a result of aluminum toxicity as a consequence of where it goes, but what are the elements that aluminum is disrupting? Iron and calcium are very important elements for brain function. Aluminum has a specific effect on calcium and calcium dependent enzymes that regulate acetylcholine. And so aluminum can disrupt calcium signaling and activation of these two enzymes, called protein kinase C and Calmodulin, which are very important regulators of acetylcholine, which helps you focus and attend to whatever it is that you're doing. So that's in terms of molecular mechanisms.

That's a really good way to understand and think about aluminum. It's substituting and disrupting calcium metabolism. Calcium is very important for activating PKC and Cal modulates those enzymes that regulate acetylcholine which is your brain's main focus neurotransmitter. So a lot of times, well before you'll end up with Alzheimer's or dementia, you might end up with brain fog, memory problems, low brain energy, even IQ losses. I have clients that have also put a huge dent in their ADHD symptoms as a result of eliminating aluminum. So the effects are kind of more global and paleo Tropic. What I would say about metals is there's this instinct, I think, in everybody to go, okay, well what is aluminum causing or what is lead causing or what is cadmium causing.

We're looking for specific mechanisms and they're there. But it's much more about these elements being able to disrupt essential elements promiscuously and then tracing back like what do those essential elements? What are they involved with? Many, many different functions. So where aluminum can cause and it's noted for its ability to cause brain fog and Alzheimer's and dementia and IQ loss and ADHD, it can

cause almost anything, anything related to inflammation, which most modern Western diseases are associated with inflammatory processes.

Dr. Wendy Myers

Yeah, these metals are poisoning enzymes that are poisoning protein production, which interferes with everything you can possibly imagine that's going on in your body. What are some of the other metals that people should be concerned about or thinking about their ingestion and detox of?

Clark Engelbert

Aluminum, probably the most important because of its ubiquity. But lead is still out there in the environment for a very long period of time. Lead spewed into the air. But as a consequence of it being used as an anti-knocking agent and gasoline exhaust, public health got wind of that. There was a lot of research done in the 70s and 80s related to low levels of lead disrupting neurodevelopment. Lead was spewed into the air for many many decades in and around this country and in many other countries around the world. So public health got wind of that. They removed it from gasoline exhaust and paints, which is a huge win. But lead is still in the environment. These toxicants, especially lead, are not biodegradable.

All of that lead that was spewed into the air for all of those years settled into the soils. And so now we're exposed to not lead in the air, which is a unique way to be exposed to lead but lead in the soil. And this is part of the reason why you hear about and see leads in baby food, leads in this product, leads in that product. It's like there are people out there that are doing measurements of that which is good, but lead is still a ubiquitous toxicant, without a doubt. It's not in the air, but it's in the soils. So that's a huge deal. And then I would probably say cadmium and mercury. Cadmium is also in the soils as a consequence of its presence in phosphate fertilizers, which is the main type of fertilizer that's used around the world.

They mined for phosphate rock in these exotic locations around the world, and they get out this phosphate rock and they're able to grind it down into phosphate fertilizer. But cadmium in these other metals, cadmium in particular, has a relationship with phosphate, wherein it comes as a part of that mined phosphate rock. They don't filter

out. They can't filter out the cadmium. It would be cost prohibitive to do that. And so cadmium is in these phosphate fertilizers that everyone is using all around the world. Cadmium and lead are very pernicious.

Dr. Wendy Myers

If you're using Miracle-Gro, you know, a lot of people use it in their home gardens, it's like, oh, you're putting cadmium in Dauphine.

Ads: 14:52

And now a word from one of our sponsors. When did you realize that you were not taking the best quality protein powder? For me was when I realized I was taking a soy protein isolate powder. It had really nice packaging, but I realized the soy protein isolate is not very good for you and your kidneys, and it's mostly GMO. There are a lot of people out there that just are not reading the labels and don't know what they're taking in their protein powder.

So for me, I'm a supplement snob. I want to take the best possible supplements for my body and for my health. A lot of people don't realize that over two-thirds of protein powders tested by consumers reports they had above California's Prop 65 limits and lead sometimes ten times over the limit. In another study, 47% of top U.S. protein powders exceeded the limits and 21% had more than double the limits of lead. It's alarming what's in some protein powders. That's why I switched to Puori grass-fed whey. It's pronounced puree which stands for pure origin.

Every single batch is third party tested for 200 plus contaminants. You can look at every bag here and see there's a QR code on every single bag right here. You can see every single batch is tested and what your batch tested for. No other brand is doing this. Every serving delivers 21g of whey protein from grass-fed cows with six grams of BCAAs (branch chain amino acids) and 2.4g of leucine. It is free from hormones, GMOs and pesticides. It is made with all clean ingredients. They have a bourbon vanilla flavor with real vanilla seeds from bourbon vanilla from Madagascar, which is the best vanilla in the world.

The dark chocolate is dark chocolate from organic cocoa powder. And that's really important because cacao is very, very contaminated with heavy metals. They of course test every single batch. Honestly, it feels really good knowing that I'm taking the highest quality protein powder. It's made from whey. A lot of plant proteins can have heavy metals in them. They have problems. Soy is genetically modified unless it's organic. So this is clean protein tested for safety with total transparency. You can get Puori's fantastic whey protein powder and use code WENDY20 at puori.com/wendy20 to get 32% off your first Puori grass-fed whey protein powder order when you start a subscription. So again go to puori.com/wendy20 and use the code WENDY20 and get this limited time offer.

Clark Engelbert

I know, cadmium and lead are still very much ubiquitous in the soil. Aluminum is kind of everywhere. And then you know mercury is definitely a very important one as well. I think lead, mercury and cadmium are the most toxic. So at lower concentration thresholds they have a bigger effect than let's say, aluminum even though aluminum is still very toxic. Mercury is another one. Mercury used to be used in or would come as a byproduct of processing in core alkali plants. A lot of those mercury cell core alkali plants were made like citrate, citric acid, high fructose corn syrup, high fructose corn syrup is still ubiquitously used.

Dr. Wendy Myers

People don't realize it contains mercury, all your fast food, your sodas and everything.

Clark Engelbert

Exactly. I'm a millennial and we grew up on soda, and it's like you're getting a little dose of mercury and mercury and a lot of other things. It's in mercury amalgams. So I'd say those in terms of ubiquity, it's like aluminum lead, cadmium and mercury are next. Then lower on the chain, nickel and arsenic. But not to say that they're not important, but they're probably arsenic can be kind of ubiquitous because it's also geogenic. It occurs in the water supply and the water tables. So that can be problematic. If we were to rank them, I'd say nickel is probably the least ubiquitous.

But it's still an issue because it's used in braces. It's used in the manufacture of nickel cadmium batteries. So it's in the background as well as being mined as well.

Dr. Wendy Myers

It's in partially hydrogenated oils.

Clark Engelbert

Yeah, exactly.

Dr. Wendy Myers

That's the catalyst to hydrogenated oils. So it's in all the fast food and processed foods in very small amounts. But most of us have been eating that stuff for a lifetime, for at least for decades. When I was growing up, I remember that. I can't believe it's not butter. The tub of margarine in my mom's fridge.

Dr. Wendy Myers

I can't believe I'm eating this since I was, like, unfortunately, I didn't go with these trends and the nonfat maybe like a minute, but then I'm like, now I just want the real thing or I don't want it. A lot of people are still buying that stuff.

Clark Engelbert

Yeah, they're still. If you can stay away from processed foods, that's the biggest thing that you can do to avoid metals in your food by far.

Dr. Wendy Myers

How do we remove metals from the brain? I mean that's the focus of our topic obviously. You can't just remove metals from any given body part that you prefer, but how do you go about detoxing the body?

Clark Engelbert

I think I have a sort of a bias towards mineral balancing because it's not necessarily targeting any tissue. But what we're doing is trying to activate or innovate your body's

own detoxification pathways, including metal binding proteins like metallic iodine. But there are a lot of different mechanisms where we can think about how mineral balancing can antagonize or detoxify metals from the brain. And maybe to step back just before we go into that, minerals are supposed to get into the brain. The blood-brain barrier evolved to regulate the mineral content of the brain. It's not just a barrier to keep things out, but it was designed or evolved to regulate mineral status in the brain. And so minerals are supposed to get into the brain.

They're used for all of these different processes. So to the extent that minerals activate your antioxidant enzymes in your brain, activate glutathione, activate metallic mining, that happens in the choroid plexus, which is the CSF fluid generator that cleans the brain. And maybe we can talk a little bit about that. But the minerals are supposed to get into the brain. They're activating all these processes related to your native detoxification pathways. And the minerals are directly antagonistic to the metals, where metals might accumulate and substitute for minerals on metal activated enzymes. Minerals can also locally and directly displace those metals that are there. So a lot of people are obsessed with chelation and pulling metals out of certain locations.

Many chelating agents won't cross the blood-brain barrier, so they're not having to get there. That's not even really a conversation. But if it were in theory, some chelating agents were able to penetrate the brain, would you want to just pull out a heavy metal from an enzyme binding site if there was nothing to replace that enzyme, like a mineral?

Dr. Wendy Myers

A lot of people get really sick from doing heavy metal chelation. It doesn't solve their problem. It's not, it's certainly warranted in some situations. It's super, super toxic.

Clark Engelbert

There's a use case for chelating agents when you're acutely exposed to something and you need to get your blood levels down in lead or whatever in an acute situation, they're warranted. But, we're talking about chronic subclinical metal toxicity that most people have. I was on Matt Blackburn's podcast in 2021, 2022 saying that

everyone is sub clinically toxic in metals. It doesn't really matter who you are, where you live, your stage of life. Everyone has metal toxicity and it's not just me saying that, right? I think you've been saying that for a long time. Doctor Wilson's been saying that. But other researchers, Chris actually, in particular, who in my book, is one of those guys that is beyond reproach in the scientific community.

He's done research for years, for 40 years just on aluminum. He authored some landmark papers in the late 20 tens, looking at the aluminum content in brain tissue of postmortem autistic and Alzheimer's disease brains. He says that everyone has aluminum as well. So it's not just me. It's not just my own theory. It's not just you bringing attention to this with your podcast. A lot of people now are saying this. But to go back to mineral balancing, we're never really targeting any sort of tissue, but we're relying on the body's own detoxification pathways to be upregulated. And the body makes a decision on when it will mobilize whatever metal you have in your brain and your kidneys and your liver.

I think the fact that minerals are supposed to penetrate the blood brain barrier and get in there and antagonize, have this antagonistic relationship with metals more broadly. That, to me, says more than anything that this approach I think of mineral balancing is better than anything else in terms of both its power and safety to antagonize metals than pretty much any other approach. I have enough case reports and I work with enough people that have had brain injuries or brain fog or autism, seizure disorders, ADHD, panic disorder. I have a lot of clients now that we've reversed those conditions using mineral balancing. There's circumstantial evidence there. There isn't any direct evidence that you can mobilize or track that process of mobilization from the brain. You can't because the technology is not there to do that.

Dr. Wendy Myers

But on the reverse, though, there's lots of research that shows heavy metals cause all these various conditions. They contribute to them.

Clark Engelbert

Exactly. If we start with people that have those conditions, we've reversed the conditions after we demonstrate metal eliminations through the hair tests in series,

then that's significant. And it suggests that mineral balancing is uniquely able to mobilize metals from the brain where other modalities simply cannot. Chelating agents don't cross many cell membranes.

Dr. Wendy Myers

You call it mineral balancing and using a hair mineral analysis. Can you talk a little bit more about that and why we need to look at the minerals and not just supplement with minerals but balance them to get the results that people are looking for?

Clark Engelbert

Yes, exactly. That's another important principle in mineral balance and more broadly is we're not looking to use individual minerals as antagonists against individual metals. And that's because ionic mimicry, where metals can mimic your minerals, is a promiscuous process. Aluminum can mimic iron, calcium, magnesium, zinc, and phosphorus. Lead can mimic calcium and zinc and copper and iron. These metals can mimic promiscuously all of your minerals. So if you let's say as an example, you heard someone else talking about lead and calcium antagonism and you decide to go, okay, I'm going to take a ton of calcium to try and antagonize my lead burton, that might work to some degree, but you run into problems when you do that long term because calcium not only interacts with lead, but it interacts with a lot of other minerals.

Calcium is antagonistic to potassium, antagonistic to sodium, antagonistic to zinc, antagonistic to iron. So you start to see that if you just take a ton of one mineral or you're just using one nutrient at a really high dose, like in some molecular circles, you run the risk of potentially imbalancing other minerals and causing problems that weren't there to begin with.

Dr. Wendy Myers

I know I did that. I took vioxx for years and years and years and marketed to women to take calcium. After taking a horrible form of calcium that just deposits in your soft

tissues and causing you calcifications. But yeah, if you did take that one mineral for years and not magnesium and or zinc or other minerals you create a problem.

Clark Engelbert

What we're always trying to do is get an accounting of the entire mineral system. That's what we're actually trying to do in mineral balancing. It's not about individual minerals though they are important as a part of that entire system. But what we're trying to do is always balance that whole system. And that has a much more profoundly antagonistic effect on your metals because of the promiscuous nature of ionic mimicry and how these elements oscillate in the body, antagonistic at the same time.

So, balancing the minerals relative to each other optimizes function number one in a much more profound way than you could ever just by taking individual nutrients. Because all of these minerals are used for thousands of different processes. That's another important thing to realize. But it's much more antagonistic to the metals because of the promiscuous nature of ionic mimicry. When you balance the minerals relative to each other and that's it. That's a huge deal. Like when someone has an overt zinc deficiency, it's not recommended that in order to resolve that zinc deficiency, they take a shitload of zinc, like 1000mg of zinc at one time. And they go, and why is that, you ask? Well, because if you take a ton of zinc at one time, you run the risk of imbalancing other minerals that are directly antagonistic with zinc.

So even in medical circles where they're trying to resolve deficiency states, what we're talking about is more subtle imbalances in the system that lead to more heavy metal accumulation. And how do we use minerals to antagonize metals? That's another thing. That's our aim. It's a very different aim than just resolving an overt zinc deficiency state, let's say, or an over deficiency state. So you always want to maintain balance in these minerals in the system. And that has a much more profoundly potent effect against these metals.

Ads 29:37

Are you taking collagen supplements? Well, check this out. Our friends at Organifi have sourced the best collagen on the planet, and you can get it with 20% off savings

today, too. So, what is collagen? It's the most abundant protein in our body. It's everywhere. It's in your muscles, joints, hair, skin, fingernails, everywhere. It's one of the fundamental building blocks of life. Your body uses collagen constantly to keep itself refreshed and repaired. But as you get older, especially as women who are going into menopause, you can lose 30% of your collagen within the first five years of menopause, and that starts in perimenopause as well. Your body just stops making as much of it, and you start losing it, especially as your estrogen levels come down. That's why consuming collagen is such a great idea every single day. It gives your body a fresh supply to keep working at its best.

It's not only good for your hair, skin, and nails, but it also helps to support your gut and metabolic health, immune system, cardiovascular strength, and all of your muscles and moving parts, too. Collagen is nothing new. It's one of the oldest supplements out there. Collagen supplements have been around for quite a while now. But what makes Organifi so special is that it's all about the quality. The non-organic collagen scare 16 me. They're really problematic because they can be full of glyphosate, pesticides, and other chemicals that you do not wanna be taking on a daily basis. Not all collagens are the same. It can come from many different sources, and the source can drastically impact its potency and effectiveness as well.

Some manufacturers just go with the cheapest stuff that they can find and then add fillers and artificial flavors, and they still charge you a lot of money for that. Organifi always goes the extra mile to ensure its quality is the best. They blend five collagen types from four different sources, and they taste and test until it's perfect. And then they go even further to test for things like glyphosate residue and other sneaky toxins that can get into the mix. After passing through all of these goalposts, it finally gets the Organifi seal of approval, so you can rest assured it's the highest quality and non-toxic. I love that this company is a company that I can trust and that their products will be safe and effective exactly as they say they will be.

In the supplement world these days, that kind of honesty and transparency is getting harder to come by. So, if you've never tried collagen, now is a great time to start. And if you're already taking it, now is a great time to switch to a better brand. Upgrade what you're doing right now so you and your entire body is gonna love Organifi Collagen. It is something that I take on a daily basis. It's been a part of my

supplement routine for the past five years, since I went into menopause, and so I can't recommend it highly enough. Now let's talk about saving you some cash as well. Here's what you do. Go to organifi.com/myersdetox and put in the coupon code “Myers Detox" to get 20% off. You'll save an extra 20% off by putting in my special coupon code, Myers Detox. So, like I said, collagen's one of those things that I take every single day. It's one of the most important parts of my anti-aging protocol, the things I'm doing to fight off the clock. So for me, taking clean collagen is really important. It's hard to find, so I highly, highly recommend Organifi collagen.

Dr. Wendy Myers

Yeah, a lot of people are really heavy metal, toxic just by way of being very mineral deficient because our soils and our food are so mineral deficient. Can you talk a little about that?

Clark Engelbert

There was a really interesting paper in 2013. There's a long history to this and demonstrating this stuff in human beings is very difficult. But in 2013 there was a really interesting paper out of Japan looking at actual hair samples of autistic kids. They were able to trace back mechanisms, specific mechanisms in the GI tract wherein these kids had many a high percentage of the autistic kids had like zinc and magnesium deficiencies.

There were certain zinc and magnesium absorption molecules and pathways that were massively upregulated to try and counter the deficiency state. So if you're deficient in zinc or magnesium, the body senses this and it goes, well, Holy cow, we're in a crisis. We need to upregulate these absorption pathways to make sure that we don't continue to slide down this slippery slope of a deficiency. Your body has these elaborate sensing mechanisms for your status of these elements. It will up regulate massively, like in the case of that and the zinc deficiency of the kids in the study, they upregulated ZIP8, which is a very specific zinc importer absorption protein. And guess what? Lead and cadmium use ZIP8 specifically to traverse the body and get into it in the first place.

So when you're in a deficiency state like this, a zinc deficiency or magnesium deficiency, the body up-regulates the absorption pathways. The metals are absorbed with more efficiency when you're exposed to them. So yes, it's a sort of like a combination of being exposed and the level at which you're exposed matters. But your nutritional status is probably one A and one B, those are the two variables that affect how much of that metal is going to get into your body. Eventually, where does that metal go? What does it cause?

There's some really interesting research going all the way back these researchers called Hill and Metron in the UK that did the original research on looking at mineral interactions in the GI tract. And they proposed theoretically that zinc and cadmium and copper would interact at the level of a GI tract. They have very similar physicochemical properties. And so the theory at the time was that because they were so physical, chemically similar, they would compete for absorption. They did a bunch of experiments in the 70s demonstrating that competition exists and is real. And that's the basis for this notion of ionic mimicry and nutritional status playing a key role in metals getting into the body in the first place. So in my mind, it's like in terms of metal toxicity, the defining concept in the entire field is ionic mimicry.

Dr. Wendy Myers

I've been talking about this. You've been talking about hair metal analysis and rebalancing a really, really long time. And there's really nothing quite like it. It's not the same as just taking minerals or just taking supplements or what have you. It's a very specific science. It has a tremendous amount of research behind it.

Clark Engelbert

It's a specific process and I think that differentiates it. I think of neuro balancing more like a process than anything else. I wrote a really long article about this on X just recently called the Mineral Balancing Manifesto. I would encourage people to go check that out. It talks a lot about the science and the history of this, but the idea with mineral balancing is it's about the mineral system, and we start there with that sort of foundational principle, and then minerals and metals interact with each other in that system. Then we get a measurement of the mineral system using HTMA. So a lot of people confuse mineral balancing with HTMA or they just think of HTMA as a

standalone test. I don't think HTMA has much value outside of its mineral balancing context.

Yeah, you can use it to measure stuff, but its real utility in value is within the context of mineral balancing. So it's the mineral system, the interactions in that system, measurement of the mineral system using the HTMA, that's really where its benefit is optimized. But then we use our knowledge of nutrient and mineral interactions to balance that whole system. That's the mineral balancing process. And then through the balancing of all of those minerals, that has a profoundly antagonistic effect on the heavy metals because of ionic mimicry. You end up with heavy metal detoxification as a consequence of mineral balancing and that process, but I think of it much more like a process.

HTMA is an important measurement diagnostic in that chain of logic in that process. We could talk a little bit about it, but what are the other interesting things that we're using it for? Or what are inherent characteristics native to that?

Dr. Wendy Myers

I wanted to just expand on what you just said, because I think a lot of people, clients and patients and even people that do detox or medical doctors, they're looking for a test for their heavy metals. Does this test show my heavy metals? That's what they're looking for. And if they don't understand how it's being used, that it can very easily be Pooh poohed, as not being accurate. With a urine metals test, you're going to see probably more metals than you would with a higher mineral analysis, but different metals come out in different ways in the body. Some come in the urine, some in the stool, some the sweat, some in the hair. So there's no one test that's going to show you all of your heavy metals. Even bioenergetics scans like the oligo scan scanner, they're not showing all of the heavy metals either.

Clark Engelbert

That to me is like one of the more important points about this and where things need to go in the future for mineral balancing and diagnostics of your metal status. There is no single test that we have that you can do a measurement on your entire body and get a reading of your entire total body burden for all the metals. It's not

analytically possible. The analytical techniques are not sufficiently advanced enough to engage in a process like that. And there's a couple reasons behind that. The ATSDR, which is a sub agency of the CDC, the Agency for Toxic Disease Substances Registry, has estimates out there for what your average person has in terms of aluminum content in their body, cadmium lead.

There are estimates out there based on absorption data for metals in the environment, autopsy studies. So there are estimates out there for the average person's total body status of metals. What's interesting about that is that when you look at the estimates for aluminum it's 30 to 50mg. And we can visualize that, think about the magnesium pill that most people are taking every day, 200mg of magnesium in a small little pill.

Your entire body has a quarter of that distributed throughout your entire structure of aluminum. And now that's an underestimate we can get into. Maybe you know that a little bit, but that's a huge underestimate in my view. But let's just say for the sake of argument, you've got 50mg of aluminum throughout your entire body, right? Five milligrams in your brain, a couple milligrams in your liver, some in your lungs, some of your kidneys. It's really, really hard analytically to measure the metals at that low concentration threshold that they're estimated to be at throughout your entire body. So, your point about there not being a single test is important.

I think about the future of this and making it or taking it from. It's kind of opaque right now we're talking about metal toxicity. And what we're talking about is circumstantial evidence. It's very good circumstantial evidence, but it's not direct evidence like, say, a full body MRI scan for all your metals where they're at the specific form. It's nothing like that. So we are still in the early phases of this and this understanding in the public consciousness that metals are a problem. But you can use hair testing, you can use blood testing for short term acute exposures. Urine testing is very good for kidney status.

Now if you're measuring metals with a legal scan I have mixed feelings on it because they're using the photo spectroscopy to measure metals in your hand. And it's like, well, what's the point of measuring the metals in the hand? If you're using that photo

Spectrographic method, why not use that on the liver or some other tissue? That's much more relevant for metal accumulation than just the hand, because.

Dr. Wendy Myers

Then it's only doing like ten metals anyway. The only way I see people being able to measure all the toxins they have in their body is with a Zydus scan.

Clark Engelbert

I've never heard of that.

Dr. Wendy Myers

It's a Zydus scan. So it's a bioenergetics scan. This offers like $30,000. It's been around for like 25 years. It will tell you every single metal, every single toxin and give you kind of a score. But it still doesn't give you a roadmap for how to detox it. You can do detoxing bio energetically, but that's like another that's a whole other podcast. You still have to tend to your body physically and take minerals and things like that.

Clark Engelbert

That's a huge problem because we're talking about metals as if they're tangible and real in a huge problem. And they are. But it's like there are a lot of people that are holding their breath waiting and going, well, they can dissociate on this problem because we don't have the direct measurements that we really need. Part of the reason why, and maybe we'll go back to this study that actually did on autistic postmortem brains, part of the reason why that study is so important, which was done in 2020, is that actually used a fluorescence microscopy method to image aluminum in brain tissue samples of postmortem autistic brains.

In that study, they're able to image little slices of brain tissue for aluminum. And that was very good. That's bringing light to this issue of we don't have direct measurements of specific tissues. The thing that was so interesting about that study and a group of studies that he and his group did, is that they were able to establish quantifiable thresholds and parameters for aluminum status in the brain and so in

that study, he talks about one microgram of aluminum. I think dry weight is where there's not really a level of concern.

Two micrograms is a level of concern. And then three micrograms per gram of dry weight of brain tissue is where they started to notice pathology develop. And so that is like the starting point we're measuring metals in the tissue. But he's starting to get an association or a correlation between the precise amount of that metal in the brain and disease processes starting, so that study is like seminal in metals toxicology. It's interesting because it's been ignored essentially almost completely by the media. And the institutions of which he's a part go, well, what is that? That's very weird because it's such a profound paper and study. The only people that are talking about are like you and me and like a few other random people on social media.

Ads 45:44

Let me ask you something a little bit personal. How do you get yourself out of a bad mood? It can be hard, really, really hard, and it only gets harder the longer that you're in that space. That's why I'm a big fan of today's podcast sponsor Organifi. They made an amazing product called Happy Drops, and they're little gummies that are super tasty, and they can help make your bad moods better and your good moods great. I'm sure I'm not telling you anything new when I say the world is really stressed out right now. You can see it everywhere. Stress and mood-related visits to the doctor's office are skyrocketing along with various prescriptions to match. And so if you are anything like me, you're looking for a safe, natural approach to rebalancing your happiness and your stress chemicals without worrying about the side effects.

Well, Organifi has given us exactly that. They're called Happy Drops, and they're my favorite new supplement. These yummy little lemon gummies are made with ginger, with gouda cola, and passion flour, all of which are shown to have positive effects on mood and emotional well-being. Plus, they have a real powerhouse ingredient, which is saffron. So why is that so cool? The compounds in saffron are shown to help your brain modulate its levels of serotonin. Serotonin's one of your happy chemicals, and saffron helps your brain enjoy it longer. Saffron also relaxes you. There are many cultures around the world that drink saffron tea before they go to bed 'cause it helps relax them and helps 'em go to sleep. Saffron also contains antioxidant properties,

which can help you protect your brain from oxidative stress. That's great for detox. Best of all, there aren't any nasty side effects. There aren't any bad ingredients and it's safe to use every single day.

Saffron is traditionally very challenging to find in the supplement world. It's difficult to plant and to farm. It's even harder to harvest, and it's one of the most expensive ingredients on the planet. But now, thanks to the super food geniuses at Organifi, we can all enjoy a real dose of real mood-lifting organic saffron for less than a dollar a day. I'm excited for you to try them. I think that everyone should. I love their happy drops. Just go to organifi.com/myersdetox and get your happy drops today. When you use my discount code Myers Detox at checkout, you're gonna save an extra 20% off. Again, that's organifi.com/myersdetox.

I want you to go out and try Happy Drops today. Like I said, I love them. I've been taking them on a regular basis to help me go to sleep at night, to help me kind of relax and get in the mood. You've got nothing to lose but your frown.

Dr. Wendy Myers

That's why we're doing this. Trying to get the word out to people that detox is going to solve a lot of your problems, your weight issues, diabetes, and it is very anti-aging. It's going to address a lot of different health issues, mental and physical indirectly. The evidence is really, really clear. The proof is in the pudding too.

Why don't you talk about some of your clients that you've been working with and some of the success stories and their turnarounds that people have had in their health?

Clark Engelbert

I have a couple really phenomenal cases of kids with autism that we've taken from verbal or nonverbal to verbal. So that would be the first thing that I would say is that we've taken kids, basically off the spectrum, you were using mineral balancing. What's more is that we have hard proof and evidence that they're eliminating a ton of metals and they're going from nonverbal to verbal.

Dr. Wendy Myers

I have a story about that too. Sorry to interrupt that, but my daughter, who was also diagnosed on the spectrum when she was like three years old, had the highest aluminum levels of any one I have ever tested.

Clark Engelbert

What was it?

Dr. Wendy Myers

I don't remember the exact amount, but it was three times off the chart. It was three times off the chart. It was crazy.

Clark Engelbert

Feel like 12mg per cent or something?

Dr. Wendy Myers

Yeah, I don't remember exactly, but I have the test. But it was very, very, very high and I gave her zeolites and did some mineral balancing. And over time she got a lot better. She's 100% now, but she's got a lot of detox, early intervention, early speech therapy, occupational therapy, blah, blah, blah, blah, blah. But that aluminum really, really causes a lot of developmental issues, including ADHD, OCD and autism as well. People just don't make the connections.

Clark Engelbert

I will go back really quickly before I get into my specific cases. He actually started doing research on aluminum in the 1980s. In the 1980s he would put a little aluminum, the same amount of aluminum that's in the water supply, by the way, into fish tanks with fish. And he could induce autistic-like behaviors in these fish just by putting a little aluminum in the fish tank. The fish would go and try to find corners in the fish tank and hide away from each other.

They would interact less with each other and they were hiding like in autism. Social withdrawal and finding hiding places is a key feature of it, you know? So a lot of this research is out there that I think is another really important point. In general, it's out

there. It's in 2000 page metals toxicology textbooks. It's in papers that are not being publicized, but a lot of this stuff is out there to bring it back to. And that's why I have so much reverence and respect for Exley. He's done a lot of this research and he's along with Wilson, doctor EQ, those guys are really the people that have blazed the trail for all of us, including myself, including you and many others as well.

But to bring it back to the cases that I've got multiple cases of autism and I have these case reports, not only people saying some writing stuff in emails, but I have a lot of the parents on video saying, I cannot believe the transformation in my child. I have a girl in South Carolina who she had. She was on the spectrum or kind of borderline, but she had really bad memory problems, almost like adolescent dementia in some ways, where her mom would take her to school and she would forget where she was when she was at school. She was like, where are we? I don't know where we are. And that has been completely reversed.

After she's gone through a massive aluminum elimination, she went through eliminating other metals as well, like iron and manganese. But that's one case that stands out. I've got another case of an older woman. This is remarkable. I don't know if you remember the calibration of the chart from RL, but the top of the chart is like four milligrams percent for aluminum. I had a lady who went through an aluminum elimination and started at .0.4. It was very low.

She went from 0.4 to 25mg per set in a three month period. We reversed her eczema, high blood pressure and osteoporosis. She's got Dexa scans going back from 2022 to 2025 showing reversal in the bone loss. So that's another really remarkable case.

Dr. Wendy Myers

People don't realize aluminum is stored in the bones.

Clark Engelbert

It claims the lion's share of where aluminum is stored is in your bone tissue. So 60% of the body burden that you have of aluminum is going to be in bone. The reason why you go, well, it's not primarily in the brain. And okay, so why is it affecting the brain so much? Very small concentration thresholds of aluminum and other metals have a

much more profound effect on the brain, because the brain is so much more sensitive. So that's why there's that autism and other neurological connections with less amount of aluminum. But aluminum is primarily stored in bone just like lead. There's an issue with that. You can be exposed to these metals. You can store them away in bone, but they can be redistributed at some other point in your life and end up in your brain eventually.

So that's another hidden reason for people potentially developing cognitive decline and delays later on. They might have been exposed to metals. Her body was successful in storing it away from the brain and in the bone. But then there's bone turnover, right? And if you go through very stressful periods, bone resorption rates go up. That metal might be mobilized and it might end up in your brain. Why? Metals distribution is chaotic and opportunistic. There's no homeostatic control mechanisms in the body to control these metals. They have to hijack those mineral absorption pathways.

But there's other cases that I've got where there was an infant with sleep apnea and really low iron. We reversed her sleep apnea. Her mom's a nurse too. So her mom knows the scale of the sleep apnea score and was getting her tested frequently. We reversed her sleep apnea and her low iron after she went through cadmium and aluminum eliminations on mineral balancing. I've got another case of a child in the western US and Wyoming, where we reversed and put a huge dent in her seizure disorder after eliminating a bunch of copper and aluminum as well. I've lots of cases.

Now, at this point, I've got other cases where including myself, but another client of mine who we've reversed panic disorder after she eliminated a bunch of lead, same exact thing happened to me. There's a guy over in Switzerland who went through a huge aluminum elimination. His ADHD is gone, so lots of cases now and hopefully a lot more in the future.

Dr. Wendy Myers

I hope this makes the point that no matter what kind of health issue that you have, you want to be doing detoxification to stop and just improve your symptoms and just generally improve your underlying health and prevent health issues that we see in the research that these heavy metals cause.

Clark Engelbert

Yeah, 100%. And there are these common mechanisms of inflammation, antioxidant depletion. I don't want people to come away with this thinking, okay, aluminum just leads to Alzheimer's dementia. Yeah it does, but it can cause anything essentially related to low brain energy and can cause bone problems, kidney problems. You know, there's even evidence for metals that accumulate in the kidneys, blocking conversion of vitamin D into its active form.

So a lot of people that are running around with low vitamin D levels, despite sun exposure and despite supplementation, they've got metals in their kidneys blocking that process. That's step one in the chain of events that can occur and unfold, that leads to a disease process. If vitamin D is diminished, you're going to have systemic inflammation issues with absorbing calcium bone matrix synthesis problems, bony issues. So these metals are the most important toxicants to focus on. There's a lot of different things that you could focus on. There's biologic toxins. There's synthetics, phthalates to clean benzene. I think of metals as at the top of that food chain because of their ability to disrupt your minerals, which are really running your entire biochemistry.

And they're not biodegradable. The metals are not biodegradable as well. So it's like once they're in your body, that’s a half life of 30 years in your bones, they're in there for that long.

Dr. Wendy Myers

What about forever chemicals?

Clark Engelbert

We get it passed down from generation to generation. Now, if your mom has a mouthful of mercury fillings, you're going to have a lot of mercury. That's another generational component. A lot of people are concerned about methylation issues, genetic snips, things of that nature. But if you are exposed to enough of a metal in the first generation, let's say that metal can cause genetic damage. Cadmium is noted for causing genetic damage because it can substitute for zinc on zinc fingers.

Guess what happens as a result of that? That genetic damage gets passed on as mutations in utero. You're born with these snips and what look like genetic issues. But they're really congenital issues of metal toxicity generationally passed down.

Dr. Wendy Myers

Think about the implications for fertility and the health of the new generation. And it goes without saying there are definitely a lot of children with hormonal issues and other health issues. The kids being born today are just very, very, very different. They're very frail, very fragile.

Clark Engelbert

Yeah, exactly

Dr. Wendy Myers

And it's not just their diet.

Clark Engelbert

It's not their diet. It's what's being passed on. It was injected immediately after they're born. I don't know how much we can say, can I say stuff?

Dr. Wendy Myers

We can't put it on YouTube

Clark Engelbert

Okay, okay.

Dr. Wendy Myers

You can't say autism on YouTube either. So it's already off YouTube.

Clark Engelbert

Oh gosh, that's crazy. We can't even say that. Again, it comes back to actual aluminum research. He's done research looking at the differences between

aluminum injected versus aluminum ingested. And you want to start from first principles which is to say like why is aluminum in a vaccine in the first place? Aluminum is in there to act as an amplifier for the antigen. Whatever is being inoculated against like mercury or an artery, measles, mumps, rubella, just putting the antigen a little bit of that sort of disease in you ejaculate is a no no no. It's not enough to stimulate an immune memory. So they use aluminum in the first place as an amplifier and adjuvant, quote unquote, to stimulate the immune system to such a degree that it will identify measles, mumps, rubella and go, oh, this is enough of an immune response. We remember this.

And that's how vaccines work. That's why aluminum is used. That's what they don't tell you. It's beneficial for that process. I'm not saying it's not beneficial. But on the back end of that it's like oh well macrophages and white blood cells mount a response to that immune stimulation. And they will come and bind aluminum after it's injected intramuscularly. And guess what? Those immune cells white blood cells macrophages especially have special access to the brain. And there you go. This is one of the reasons why you know these are these pharmaceutical shills and manufacturers make this argument. It's like well, it's just a small amount of aluminum. It's not that big a deal. It doesn't matter because it's bypassing gut and liver detoxification barriers.

But there is this immune stimulation that causes macrophages to bind aluminum, which then have special access across the blood brain barrier. It gets across the brain much more easily than aluminum that you ingest in your food.

Dr. Wendy Myers

When you think about it, if you get every single jab on the schedule, 72.

Clark Engelbert

It's a lot of aluminum.

Dr. Wendy Myers

13,000 micrograms of aluminum for 18 years. It's absolute insanity.

Clark Engelbert

That's 13,000 or let's say 30mg over that period of time ingested, and going through your digestive tract, most of that's going to be excluded. But most of what's injected gets into the brain and gets into these other tissues that are very sensitive. So we have strong exclusionary mechanisms at the gut level that we don't have defenses for when you get injected with that same amount.

Dr. Wendy Myers

You guys probably know my position on the jabs. I'm for no jab. I won't do those ever ever again. I made a huge mistake and I think that's why my daughter had an autism diagnosis.

Clark Engelbert

Did she go through the full schedule when she was born?

Dr. Wendy Myers

She got about ten injections. I stopped at 18 months when I noticed that her language was regressing. So I just thought, why don't we just out of caution stop anything weird that I'm doing? Because I had taken every other precaution.

Clark Engelbert

Only organic food, organic clothing, no plastics?

Dr. Wendy Myers

No, I mean, just everything and making her own food and whatnot. But. And that was the only thing. I just had not educated myself enough what there was. It's tough to find the information. I was looking online. I was tired. The information is hidden.

Clark Engelbert

Yeah, purposefully.

Dr. Wendy Myers

You're not able to get proper information on the negative side effects of the jab. But that's a whole other podcast we can get into. I'm so thankful to God for the children I had gotten that I'd been studying health for so long I knew how to detox my daughter. I knew the underlying causes of autism, mainly from Mike Adams' work that I had been following him for a long time and I was able to reverse that in her. But a lot of people are not so fortunate, not catching it in time, not figuring out what the underlying causes and what to do.

Clark Engelbert

I think a lot of us got into this space because we trusted medicine and the institutions, and we got burned pretty hard, myself included. When I was much younger, when I was in my early 20s, I was having these panic attacks and mental health episodes that I would just go to the doctor for and thought the doctors are going to fix me, you know? They ultimately ended up making me far worse. So you don't want to know what you don't know when you get into this. There is a lot of institutional trust there when you're naive. But a lot of people have gone through these events and episodes that we have. And you kind of get educated in a different way.

Ads 1:04:12

For anyone listening who really wants to detox their body, go to heavymetalsquiz.com. I created a quiz for you. It only takes a couple of seconds, and it's based on some lifestyle questions. You can get your toxicity score and get a free video series that answers all of your frequently asked questions about how to detox your body. Check it out at heavymetalsquiz.com

Dr. Wendy Myers

Well, Clark, thanks so much for coming on the show. You're educating practitioners now for any doctors or health practitioners out there that want to learn the science of HTMA and just dig deep into your brain about everything related to heavy metals and how to detox them. So why don't you tell us about that?

Clark Engelbert

I had a program before, a training program for mineral balancing in May called Practitioners with Doctor Leland Stillman. Leland and I are still really good friends. He moved on to scaling his medical practice, and so he's focusing on that only. So we finished that program. We ran that for three years together, and we trained hundreds of HTMA practitioners. A couple months ago, my buddy Luke Pryor, who we've known each other for well over a decade, came to me with this idea of continuing that program. We've added a bunch of layers to this new program that we call HTMA Pro, but it is for the practitioners that are out there who really want to learn how to do mineral balancing the right way and analyze their tests the right way so that you can get results with your clients, like I've sort of described here with my own.

But we are enrolling right now in HTMA Pro. If anyone's interested to look at that program, you can go to htmapro.com or follow me on socials, nutritional_analytics on Instagram at metals_brah on X. Pretty active on both of those social media sites. My website for working with me, one-to-one clients is nutritionalanalytics.com. But we're actively enrolling in that in the training program. The program starts next Tuesday. So you've got about a week to get enrolled. I have a lot of experience training people now. I feel like with Luke, we've really optimized maybe some of the back end stuff that wasn't as optimized before with Leland.

I think the benefit of our program, maybe over others just really quickly, is that with training programs and we've been through this, Wendy, a lot of it's like PDFs that you get or a text book and you have to read it. It's self-study and then, you do an exam at the end of studying yourself. We don't do that. There are programs that do that now. But we have two live calls every week for 12 weeks in HTMA Pro.

Dr. Wendy Myers

Because you have a lot of questions that come up. Yeah.

Clark Engelbert

Imagine just reading a textbook. You go to it, you're enrolled in a class at university. You get the textbook and you read it and you go, well, I have like infinity questions

now based on my reading, because there are things and gaps in my understanding that I need filled in by professors and tests. And so we're trying to design the program in such a way that it's similar to an actual college course that you're going to take. You can interact with Luke and I every week. We have calls every week, one hour to two calls a week for 12 weeks, and we've got 212-week programs that you have to go through to eventually get certified through and to complete the program. So it is more rigorous, but you're going to get a lot more in terms of your learning and actually becoming an expert in this, so that you can help people.

Dr. Wendy Myers

I was really happy when I saw that you had created this HTMA course because it's so important for any health practitioners out there listening, any doctors, medical doctors, whatever you're doing or you just want to get started as a health coach or whatever, but it's so important to add detoxification. I can't stress that enough, because you're really going to get to the underlying root cause of a lot of people's health issues. So it's really important to learn this information.

Clark Engelbert

In the coming years, it's like you and me can't solve this problem alone. We're going to need people who have trained in a lot of these modalities to help all of the people who are out there who are struggling right now.

Dr. Wendy Myers

Yeah, absolutely. I'm so happy to see so many more people out there on social media talking about toxins, and they're specializing in that. When we first started, I mean, it was just like a little desert town in Texas. There was hardly anybody talking about this stuff. So I'm glad there are more people there. You're creating an army there.

Clark Engelbert

We both are

Dr. Wendy Myers

Well, Clark, thanks so much for coming on the show. Everyone. I'm Dr. Wendy Myers. Thanks for tuning in every week to the Myers Detox Podcast. I love doing this show and having experts like Clark on to really help you make those distinctions and just give you that info you need, the motivation, that kick in your butt that you need to finally get started on detoxification and really improving our lives. So thanks for taking your precious time out to tune in to the show.

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