



# The Solari Report

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## Solari Wellness Series: How to Detoxify Safely and Efficiently with Dr. Christopher Shade



**Brigitte Mouchet:** Hello. This is Brigitte Mouchet with the Solari Wellness Series. Thank you for joining me today for an interview with Dr. Christopher Shade on detoxification. There are more and more reasons for us today to better understand how detoxification works in the body so that we can do the right thing, which is not always easy.

That is why I invited Dr. Shade, who has been studying the detoxification process and developing solutions for many years.

Dr. Shade, welcome to The Solari Wellness Series.

**Dr. Christopher Shade:** Hello, Brigitte. It's great to be here.

**Mouchet:** Thank you. Christopher Shade has a PhD in environmental science and aquatic chemistry. He is the founder and CEO of Quicksilver Scientific where he continues to be the driving force behind the development of new solutions.

Dr. Shade's deep knowledge, passion for healing, and intuitive understanding of chemistry and biology are reflected in Quicksilver Scientific's detoxification products.

Dr. Shade is a recognized expert on mercury, heavy metals, and the human detoxification system, and he has been sharing his expertise with doctors and patients in the US and internationally for many years.

Dr. Shade's current focus is on the development of cutting edge lipid-based delivery systems for nutraceuticals such as liposomes and micro-emulsion systems to address the growing need for high quality, affordable detoxification solutions.

So let's start by defining what a toxin is and follow with an overview of the human detoxification system. How does that sound?

**Shade:** Sure. Even starting, a lot of people miss the interconnectedness of all of the parts of your body. When we talk about detoxification, it's not just that we are going to go in and pull this thing out that might be slowing you down a little bit, but what we are going to do is tune up organs like the liver that, yes, they detoxify, but they are also controlling so much of your metabolism and how you generate energy and how much you burn versus store energy. They can control hormones and the immune system. So it becomes a very big part of wellness and keeping a really thriving system.

Back to your question of ‘What is a toxin?’, I’m glad you asked me that. It seems like an obvious question, but a toxin is really just a chemical, and you make a lot of chemicals in your body. You’re made out of chemicals, and there are chemicals in the environment that are coming in and going out.

The point at which those chemicals are starting to create negative reactions in your body – maybe blocking enzyme reactions or maybe causing a distortion in your brain called neuroinflammation that is causing you to think fuzzy or start having anxiety or maybe it’s changing your metabolism so that you are putting on or holding weight – is the point where you get more chemicals in your body than it can accommodate. That is when it becomes a toxin.

Things that we think of as toxins are things where that tipping point where it becomes negative for the body is at a low level. So what I specialized in were metallic toxins. My PhD was around mercury in the environment.

Mercury is a very quintessential toxin because very low levels of it cause a lot of problems in the body. Lead, arsenic, and cadmium all do that. These are things that we are exposed to and can build up in us and start causing a lot of problems when the supply of them into the body exceeds how fast we get rid of them. But then there are mold toxins, which are a really big one these days. There are all of the pesticides and herbicides that are distributed all over the place because of their use in agriculture. There are plastics and plasticizers and volatile organic chemicals like gasoline fumes.

What are you exposed to more than you are getting rid of? And how do you keep your body tuned up so that it is always getting rid of these things as you are exposed to them?

**Mouchet:** How do we do that?

**Shade:** That is a good question!

**Mouchet:** Do we need to talk about all of the organs involved first?

**Shade:** When I lecture on detoxification, I like to talk about microcosm and macrocosm. What do we mean by that in the body? The microcosm in the body is a cell. The cell has machinery for detoxification. They are often called ‘phases of detoxification’. If you picture a little cell there, and there is a toxin getting into the cell, you will first prepare the toxin if you need to and make it reactive so that you can then link something onto it.

In the phases, there are phase one, phase two, and phase three. In phase one you take a toxin that is maybe not reactive like a plasticizer or a volatile chemical like a gasoline-type of chemical, and you make it reactive. Then in phase two you link something onto it that you make. The most notable of those is called glutathione. It’s an antioxidant detoxification chemical that you make in all of your cells.

At the end of phase two you have the toxin linked onto something that you made, and it’s a toxin glutathione complex or a toxin glutacnic acid or sulfate complexes. There are a couple of different complexes you make.

Then you’ve got to get it out of the cell, and that is phase three. You’ve got these transporters that go across the membranes and actively transport that toxin out of the cell. They use energy, ATP and magnesium. This is why you need energy from your mitochondria to detoxify and one of the reasons why you have a high demand for magnesium.

The microcosm was the cell pushing the toxin away from the cell. When the toxin is in the cell, it can damage the mitochondria, and then you can’t make energy. It can damage a number of different enzymes in there. It can damage the membranes, and then the membranes aren’t able to pull in nutrients right and excrete waste right.

The cell needs to get these things out and push them away, and that is the microcosm. But where does it push it into? The extracellular space.

The extracellular space, also called the extracellular matrix, is very interesting. It’s a connective tissue, and it is the one organ that connects every single cell in the body because that is a continuous system of connective tissue between every cell. The lymphatic channels build through this extracellular matrix. This is where all of the energy medicine happens – in the extracellular matrix.

What are known as the ‘meridians’ in Chinese medicine are moving their ordered, structured ion channels that move through the extracellular matrix. When you do acupuncture, the changes caused by acupuncture cascade through the extracellular matrix and change the way that you move things from your blood to the cell and how you communicate cell to cell through the body.

In that microcosmic detoxification, you push the toxin into the extracellular space. Now we have to move it from there, and it will join into the lymphatic flow, and then it will join into the blood. From the blood it will move to the organs of elimination. This is what we call the macrocosmic aspect of detoxification – how you take that and put it out of your body system.

The most notable of the organs in that is the liver. Then you also have the kidneys as a number two, and you have the GI tract as number three, and then the skin. But the liver is taking from the blood and dumping into the GI. So this is the number one route.

It’s important to visualize how the liver does this. It’s going to take us to the importance of bile flow. If you remember, bile is that green liquid that comes out of the liver. We usually think of it as being necessary for fat digestion because it’s an emulsifier and it emulsifies fat. But where does that bile come from?

If you picture a cell, picture it like a rectangular box. On one side of the box you have a blood vessel coming in and feeding the liver cell. On the opposite side of it, you have almost like a blood vessel, but it’s called a bile canaliculus. What you can envision is roots of a tree coming from every single cell in the liver, feeding this bile tree. These little rootlets are coming together into bigger rootlets that are coming together in what is called the common bile duct. So it’s like an upside down tree, and the roots are extending into every single cell and draining out through a main trunk that exits the liver and goes and fills up the gall bladder and then exits that and goes into the small intestine.

Every cell is on one side fed by blood, and there it can take both raw toxins that you have inhaled from the air or that you’ve absorbed in the GI tract from the food, or it takes these conjugated toxins that the cells made and threw into the bloodstream and pulls them into the liver cell, does whatever work needs to be done to finalize their processing, and dumps those toxins into the bile flow.

When you do that, the toxins go down with the bile. Yes, bile is going to emulsify fats, but bile is also bringing all of the toxins out of the liver and into the GI tract. It also sterilizes or cleans the upper GI tract.

When people talk about probiotics and microbes in your GI tract, that is down further in the GI where they live. The Upper GI is supposed to be fairly clean. So bile is doing all of these things for us. But when we block the bile flow, then the liver can no longer get rid of those toxins and dump them into the GI. Instead, it opens up another door and dumps them back into the blood. So this is a very dangerous thing when we can't get bile flow going because it makes us accumulate toxins, and then in pulses it flushes them back into the blood.

When people don't do proper sequences of detoxification, this is what happens and this is what people call a Herxheimer reaction. So it's important to know what kinds of things block that flow. Without having that bile flow open, you shouldn't be attempting to do detoxification.

**Mouchet:** That is a very nice explanation. Thank you.

What is the best thing that we can do to maintain a healthy detoxification system then?

**Shade:** The first thing to think about, and we will go back to keeping the liver and bile open. Then we will talk about other pathways to keep open. When you really want to detox, how many of these do you open, and how do you open them all?

What blocks bile? The basic thing that blocks that is stress and being sympathetic dominant. Somewhere in your interview series someone talked about the autonomic nervous system. The autonomic nervous system is the background nervous system that automatically works to control breath rate, heart rate, and very importantly perfusion, which is how much blood you move into what compartment.

An organ needs a lot of blood to feed it. There are times when you will move a lot of blood to an organ, and then there are times when you will starve it a little bit more.

The autonomic nervous system has a yin-yang pairing to it called parasympathetic and sympathetic. Sympathetic autonomies are what people will remember as fight or flight. So when your autonomic nervous system goes into sympathetic dominance, you are in a fight or flight stage. In that, you starve your system of energy for things like detoxification, regeneration, and general healing, and you flood blood and energy into fighting or running. If we are chronically in a sympathetic state, we are chronically moving resources away from clean-up and regeneration.

Parasympathetic is the opposite. That is a very Zen-like state. They call that 'rest and digest', or more broadly 'rest, digest, repair, regenerate, detoxify'. Those are the things that we want. So we have to make sure that we can let our bodies shift naturally between times when we are on it and really focused on something and sympathetic and times when we are relaxing back and letting our body go parasympathetic.

Unfortunately a lot of toxins work in our brain on a receptor system called the glutamate receptors. The glutamate receptors are responsible for you being 'on it', but they keep you in sympathetic. Things like mercury and mold toxins will hyperactivate the glutamate receptors. When they are hyperactivated, yes you are in sympathetic, and you also get symptoms like anxiety. Then when it goes on for a long time, you start creating free radicals which gives you brain fog. Even worse, you are losing sleep, and there are a number of things going on.

When those glutamate receptors are hyperactive, they are reflexively blocking your bile flow, and you are not detoxifying. So you need to break that link there.

One of the other things that makes you sympathetic-dominant and also works on the glutamate receptors and directly blocks your bile flow is a certain hormone imbalance called estrogen dominance. That is when your estrogen levels are too high relative to progesterone levels or too high relative to testosterone levels. The opposite of estrogen is progesterone.

So when people are doing hormone replacement therapy, it used to be that when women went through menopause they would give them estrogen, which generally makes things worse. Now it's more that they focus on progesterone and testosterone and small amounts of estrogen. Progesterone, in fact, makes you relaxed, it acts on the glutamate receptors, and it's great for opening up bile flow.

One of the classic remedies for opening up bile flow are bitter compounds, or what people call 'bitters'. They have a resurgence in today's cocktail culture, but they have always been big in the European folk medicine. The Germans and the Swedish would traditionally have bitters after meals to stimulate digestion. Stimulating the bitter receptors on the tongue opens up the bile flow.

In fact, as they've gone in and done more science over time, they've found bitter receptors all through the body, including in the ovaries, in the pancreas, in the stomach, and in the liver which is another mode of action for opening up bile flow. In this world where everybody is focused on sweet and salty, we need to move a little bit back to the bitter flavors because they open that up.

The first thing that we need to do is keep our bile flow open. That involves: 1) Making sure that you've got poise in your system and you're not always stressed out, 2) You are taking bitters, and 3) You have a good fat content in your diet. When you are all carb-based, you shut down a lot of the bile flow that is necessary to keep the liver moving. In fact, a carb-based diet has a whole range of consequences, one of them being fatty liver disease.

A long time ago there was only alcoholic fatty liver disease, and now there is an epidemic of non-alcoholic fatty liver. That is from being too carb-based in your diet.

Carbs used to be a luxury. If you go back to caveman days, it's not like they went to get a loaf of bread and ate that. Carbs only happened when you came upon a fruiting bush or some source of seeds that just came out. People were more often eating fat.

When carbs are around, you go into a storage mechanism where you start depositing fat. Over time it creates an inflammatory mechanism where inflammation is building up in body and in the vasculature and in the liver. Another thing that we have to be really cognizant of in detoxification is that inflammation blocks detoxification. That's doing it both at this liver/bile drainage level, that macrocosm level, and it's also doing it at a cellular level.

So we said that we have to keep the liver open, we need bitters, and we need less stress in our life. We need to lower inflammation, and we need to get away from too much carb.

Two other organs that are helping us, GI and kidneys, we need to be drinking enough water and peeing a lot. During active times of detoxification, often you will take some diuretics so that you pee more, and those would be things like cranberry juice and some of the different herbs like corn silk or horsetail or cleavers. Dandelion is probably my favorite kidney tonic.

Then the GI tract has to be moving a lot, so you need to be going to the bathroom a lot. You cannot be constipated and detoxify. You need to be going to the bathroom with bowel movements preferably twice a day. If you're not doing that, then you should introduce magnesium into your diet, more water, and maybe fiber like gums like acacia gum, things that can help you be more regular to move everything out of there.

The last organ that you are going to use is the skin, and that is for sweating. Hanging out in saunas is probably the best passive way to both relax and detoxify. It's great to sweat when you are working out, but when you are working out, you are a little bit more sympathetic-dominant, so it doesn't work quite as well there.

Let me pause after that long ramble and see where you want to take that.

**Mouchet:** That's amazing! I love the way that you add some elements from different systems and different modalities and different philosophies. It gives us a very, very complete view.

**Shade:** It's easy to think that this is just a chemical endeavor, but it's neuro, emotional, psychological, energetic, and there are so many different levels at which you are generating wellness and allowing your body to do what it's supposed to do. There are so many different ways that we can encourage that.

**Mouchet:** That is a really good picture.

Are there any signs? I'm thinking about what could be signs that the liver needs attention or that the body is not detoxifying or that the body is detoxifying. How do you know? What are the signs that you need to be watching?

**Shade:** I think that liver is the most important one to focus on. So first we will ask: What are signs that you are toxic? How do toxins manifest most? What are the signs that the liver is not really doing its job right?

Toxins, especially metals, but really all of them, tend to affect you most in a cognitive and an energy way. On a cognitive level, they are shifting you over to this glutamate-dominant which will often generate anxiety first, and then then it will create cognitive 'brain fog'. You have a hard time processing, and that can come directly from the toxins and from secondary effects. You start getting problems in your GI, especially when your liver is not working well, that causes something called 'leaky gut'. Leaky gut is when you are getting little parts of bacteria from your GI tract into circulation, and they are inflammagens. They generate inflammation, and this inflammation opens up the blood-brain barrier, and the inflammation goes into the brain and creates a lot of this brain fog and anxiety.

So you've got these neurological issues like that, and then you are damaging your energy metabolism, your ability to create energy and vitality, at a couple of different levels. The mitochondrial is a microcosmic aspect of that. That is a cell-level energy generation damage. Most of the toxins are directly damaging to the mitochondria. There is a very delicate system of support inside the mitochondria to keep free radicals and toxins under control, and it is easily damaged. The membranes are also easily damaged in the mitochondria, and that is where the ATP generation takes place.

There is tons of data on toxins damaging mitochondria. Then at a macrocosmic level or systemic level, toxins are directly damaging to the thyroid. The thyroid is responsible for being the gas to your metabolism. How much energy you are going to generate is signaled by the thyroid. That is how much T4 hormone it puts out and how much that converts to something called T3, which is the active one.

A lot of the toxins block the formation of T3 from T4, and you will see T4 normal or elevated and T3 low, and the energy is down.

So you've got the mitochondria, you've got the thyroid, and the adrenals and the whole kidney system are affected by the toxins as well. So often you can get into a bit of a funk where your energy is so low that you don't have the energy to detoxify. Then it becomes a little bit difficult. But the first thing that you can do is work on the liver. So how do you know that the liver isn't working?

Whether this is before you start detoxifying or when you start detoxifying, if you get a lot of itching and any rashes coming out, that is because the toxins weren't successfully going through the liver into the bile, and instead they got dumped back into the blood. You are dumping into the blood not just toxins but bile salts. Bile salts will circulate, and when too many are in the blood, they lodge under the skin and they make it itchy.

The toxins then try to come out through the skin and will often provoke inflammation or allergic reactions, and those are the rashes. So generally people with eczema have had a long-standing issue with their liver, and they started an allergic and even an autoimmune reaction to things starting to come out through the skin.

So the skin is a big signaler to it, but also what they call 'upper right quadrant discomfort' like on your right side, just about at the base of your ribs, after you eat – especially a fatty meal – if that feels heavy or tender, that is the bile not being able to flow. Maybe the gallbladder is jammed up. You can get this sludgy material in the bile tree, and you get that symptom there.

So after a meal, especially a fatty meal, if you have discomfort up there or if you start having itching, that is because the bile is not flowing correctly.

**Mouchet:** That is very interesting. I'm dealing with that kind of problem right now.

**Shade:** We'll get you some bitters.

**Mouchet:** Yes!

**Shade:** I can tell you how we set up our detoxification systems. It is all based around this understanding. At Quicksilver Scientific I started the company building out detoxification systems. Because my PhD was in mercury chemistry. I first developed specialized testing for mercury, and then I put together these detoxification systems for it. Then I looked more broadly at all toxins, and I started making more universalized detoxification systems.

With the detoxification systems there is a really simply-named base system which covers the most ground, and it's called PushCatch LiverDetox. It's got two parts. One part is called Liver Sauce, and the second part is called Ultra Binder. I didn't talk yet about binding toxins in the GI, so we will get to that. First, we just talked about how we move things through the liver.

When we move things through the liver into the GI, the problem is that a whole bunch of them get reabsorbed. So you put this poison into the GI, and it comes back. So moving the bile is called the 'push' with the toxins, and then the 'catch' is the binder.

Binders are things like activated charcoal or clay. These are things that are not absorbed into the blood, but they catch the toxins that come out with the bile and prevent you from reabsorbing them. So in this PushCatch LiverDetox system you take Liver Sauce, and Liver Sauce has a couple of different programs in it. When I say 'programs', these are pairings of botanicals or nutraceutical compounds. Nutraceutical compounds would be like resveratrol or curcumin as pure compounds isolated from a plant.

So we have got several different compounds in there. We've got a set of them which are called a program, which are bitter compounds for bile flow. We've got another set that activate something called Nrf2, which turns up at a cellular level in the microcosm. It turns up the chemistry for preparing the toxin, linking it, and dumping it out of the cell. Then we also have a program of compounds in there for stabilizing the immune system when you do that. What we are trying to stabilize you against is what is called mast cell activation which is generating histamines and allergic-like compounds. People who get very toxic get it from histamine released from the mast cells or other inflammatory release in this more allergic-like system.

So we have got stabilizers for that so that both the compounds that we give you, you don't react to allergically and the toxins we're moving aren't reacted to. Remember, those reactions are inflammatory reactions and they block detoxification.

So you take Liver Sauce. It activates the cells that dump toxics out. It activates the liver to pull the toxins and dump it out with the bile into the GI, and a half hour later you take the binder and you pick those all up.

We specialize in bio-availability here. So we use these systems of liposomes and lipid nanoparticles, which are these tiny little fat bubbles containing the compounds that are therapeutic. We make these little bubbles so small that they passively defuse right through your oral cavity. You'll take these in your mouth, hold them, swallow them, and they will start absorbing right in your mouth. They will finish absorbing in your stomach and upper GI, and they will peak in your blood in 15-25 minutes. So we are able to activate all of this detoxification chemistry really quickly and then come in with these binders and pick it all up in the GI tract.

All people's negative reactions to detoxification are caused either because of the failure to move the bile at the same time that you are moving the toxins or because you haven't bound them in the gut and you reabsorb them. Then the second level of importance is because they have these allergic reactions to what they are taking and what they are moving out of the body.

Once we are able to control those aspects there, we are able to go in and detoxify very rapidly and very powerfully without having all of the side effects that people are used to having.

**Mouchet:** And the Herxheimer effect is one of those effects?

**Shade:** Yes. The Herxheimer reaction is a really broad term, and it's misapplied quite often. It is supposed to be a certain inflammatory reaction when you kill too many bacteria at one time, like with a really strong antibiotic. But it tends to be whatever negative reaction you have to either an antimicrobial therapy or detoxification. So they would say, "I'm Herxing. I took all of this detox stuff, and I've got rashes and a headache and diarrhea."

That is all side reactions because you are not detoxifying correctly and your body is reacting to that. You don't get those Herx reactions when you detoxify properly.

**Mouchet:** Is that a complete view of the detoxification process and solutions?

**Shade:** It's not a complete view, but that is the most essential core view – to activate all of that at once.

There are things that we can add on to expand that. Glutathione is really great for detoxification, especially of heavy metals. So we can add glutathione into the mix to help that quite a bit.

There are things that if we have issues with some viruses in the body, you can use nano cat's claw to help eliminate those. When you have chronic infections in your body, that blocks detoxification. So there are different add-ons that we can have.

When we take the Liver Sauce, we can add other things in there. Maybe we are adding B vitamins to help catalyze some of these reactions. We can add the glutathione to accelerate it or cat's claw to block Epstein-Barr and cytomegalovirus and help all of that.

Then, as I mentioned before, we have to turn up the kidney activity. The kidney has got some of the same chemistry that the liver has. So the Liver Sauce will activate that chemistry, but then drinking more water and doing things that help you urinate more like dandelion or cranberry will help that. Saunas for sweating will help excess toxins leave the blood through the lymph and through the sweat and take some of the heat off there. So these are all other adjunctives that can help with it.

Remember how I said that we need to be more parasympathetic? That could be breathing exercises and meditation that could help you be more parasympathetic. Or it could be supplements like GABA or CBD. CBD is a really important one for balancing sympathetic and parasympathetic, and it is a really important brain supplement for calming down that hyperactivity in the brain that blocks a lot of that.

Those are great things to add in, and then anything that you can do to stimulate lymphatic flow. That could be anywhere from rebounders – the little trampolines that you jump on – or vibration plates that are really good for that. You stand on those and they shake you back and forth at different rates. There are lymphatic drainage wands that I've used before. They have a plasma in them that are really good at moving lymphatic flow. We call those lymphatic enhancement technologies.

Then there is massage. A lot of people will go and get a massage, especially when they are toxic or detoxifying. They will feel crappier after the massage than before. What they have to do is take some bitters and some binder to bind up everything that has moved to make sure that you move all of those toxins you just flushed out of your tissues. Make sure that they get to the GI, to the binder, and taken safely out of the system. Then you will see that you don't feel bad after the massage.

That is a more broad view of all of the aspects of detoxification.

**Mouchet:** Thank you. What about detox diets? Do you think those can help? And what about fasting?

**Shade:** I'm glad you brought that up. There are a lot of things that are lightweight – not really strong, but, “Sign up for this program and take these detox shakes and this and that.”

What is good about that is that the most important thing around diet for detoxification is eating less, and very important is eating less carb. So keto diets became all of the rage after paleo diets. Paleo diets had some problems in it. It was too protein heavy. It had the carb restriction, which was good, but it was too protein heavy. When you jam a lot of protein in, you turn the protein into sugar. It's called gluconeogenesis, and you're not able to get into states of ketosis when you burn fat.

In the keto diet, people well know that a lot of people often go into getting 'keto flu'. Keto flu is when you start burning fat, you start mobilizing fat soluble toxins, and you're not moving them through the liver or binding them correctly, and you feel crappy.

If you give people who have keto flu binder, they feel better right away. So it's important to see how strong that diet acts as catalyzing detoxification.

You don't need to go all the way into a keto diet or into ketosis if you don't want to. You can use a helper. We have a product called Keto Before 6. If you take it on a fasted stomach in the morning – just meaning that you didn't eat overnight – you will be in ketosis in an hour and a half. It's not because there are exogenous ketones, but because there are compounds that hit triggers that flip you into ketosis.

There are ways to get in there really quick, but the most important thing around detoxification is just to eat less. The easiest way to do that is intermittent fasting. If you want to go all the way to water fasting, that's great, but that is pretty intense. At least just give your GI tract a break and skip breakfast. If you want to skip dinner, you can do that, too. But intermittent fasting should be anywhere from 14-20 hours in between your last meal of the previous day and your first meal of the next day.

There are so many benefits that are gained during that period. It's really exceptional. When people couple some level of fasting to the detoxification, everything happens a lot faster. Then when they do eat, they should minimize carbs, eat a moderate level of protein, and a lot of fiber and vegetables. It should be some blend of cooked and fresh vegetables, usually depending on what time of year it is or how cold your environment is. When you are in a really cold environment, being raw all the time is hard on the body. You need more cooked vegetables. Whereas in the summer or in a hot area, you can focus more on the raw vegetables.

That is the outline of the diet.

**Mouchet:** Thank you. We are touching on a lot of very, very important topics here.

**Shade:** The diet all ties back into the mitochondria because when you go into those periods fasting, especially carb restriction, there is something called AMPK activation. That is what happens when you starve or carb restrict and go into ketosis. You have AMPK activation, and it activates a real mobilization of energy resources in the body which results in very clean burning. So you start burning your fat, you burn more glycogen, and you actually increase how many glucose transporters you have. In doing so, you increase the number of mitochondria in the cell, and you increase how effectively or efficiently they burn.

You turn yourself into a clean burner, and that energy is then used for detoxification. When you've got a lot of energy, you can use it for immune health, detoxification, and regeneration all at once. That is where we want to get to. We want to take out all of the interfering compounds, we want to get you into a strong, healthy metabolism, and we want to get you running all your programs at once – whether it's detox, immune, or regeneration. That is the vitality where we are trying to get everybody to.

**Mouchet:** Wonderful! One other little thing that I wanted to ask you is that in the environment now we are seeing more and more nanoparticles. How can we catch those?

**Shade:** They are a little bit different. Where do you find these nanoparticle exposures? There are a variety of industries releasing them, and we have to differentiate the mineral nanoparticles from the nanoparticles that I make for delivery called lipid nanoparticles. Just looking at those first, those are made out of the same thing that your cell membranes are made out of, called phospholipids. They will have other oils in them. That is actually how you move dietary fats from your GI tract out to your cells. You make these things called chylomicrons, which are little lipid nanoparticles. You have all of this transport and enzyme system for taking them apart and taking the energy out of them and using them for burning fat for energy.

When we are moving our nutraceuticals through you, we are making a structurally similar particle to bring this stuff into you. That is a good nanotechnology.

A bad nanotechnology would be these mineral nanoparticles like titanium dioxide that are in a lot of sunscreen and white pigments. Then you run into the aluminum nanoparticles. Aluminum nanoparticles are adjuvants in vaccines and what people refer to as chemtrails. I haven't seen the data on these, but allegedly chemtrails are little dispersions of nano aluminum particles and some blend of aluminum, barium, and strontium. These things rain down and are allegedly getting caught up into the biology.

They are not a dissolved metal like lead or mercury that makes its way fluidly through your system and gets into your aqueous biochemistry; these are little particles, and they get sucked into your lymphatics. They interfere in your extracellular matrix. I was kind of giving a little primer on how important the extracellular matrix is to the way that you move nutrients and waste from cells to blood and the way that you communicate cell to cell. All of the sensitive communication machinery like the Chinese medicine 'meridians' move through all of that extracellular matrix. That healthy functioning of the extracellular matrix is based on its structuring as a gel material.

Things like aluminum go in, and they disrupt the structuring of the extracellular matrix, so they can obstruct the autonomic nervous system and the meridians moving through there. Then they accumulate in the lymph nodes, and you need to get them out of there because they start inhibiting your immune system.

So what is moving through the lymph and the lymph nodes, but all the immune cells and the immune signaling are all going through there, so when you build up these toxins in there, you can blow your immune system.

Getting rid of them is more in that lymphatic section, so that would include the massage and the rebounding and the wand technologies for moving lymph. Acupuncture and homeopathics and energy medicine are necessary for moving those materials out of the system.

**Mouchet:** I see. That is a great explanation. Thank you.

I think that we have talked about most of the things that I wanted to talk about. Maybe you could talk about autophagy and detox.

**Shade:** Sure. So now we are going back into these dietary ideas. Autophagy means 'self-eating' and this is a higher level of detoxification.

Yes, we need to go in and pull mercury out of the cell so it's not damaging the mitochondria, but what if it already damaged the mitochondria and you have a bunch of half-functioning mitochondria in your cell? Half-functioning mitochondria are toxic themselves. They produce free radicals, they don't produce energy, so they are further damaging your cells. So we need to go in and we need to destroy that mitochondria, and we need to make a new one – or we need to just destroy the whole cell itself and make a new one.

Autophagy is to destroy, and then the flip side of it is to rebuild. There are subsets of autophagy, one being mitophagy. That is consuming damaged mitochondria. That is one side of the coin, and the other side of the coin is mitochondrial biogenesis. Biogenesis is rebuilding a new mitochondria.

Endoreticulopathy is taking endoplasmic reticulum which is an organ in the cell called an organelle and digesting that and rebuilding it.

So when do you do these things? You do these things when you are in a more fasted state. There is this whole yin-yang between fed and fasted. When you are constantly eating carbs all day, you never flip over into this clean-up phase. It is when you are in carb restriction that you are in this phase. And that is important that I say 'carb restriction' because, yes, it is good to completely fast, but if you need some calories and you get those from fat like people of the Bulletproof coffee who put butter and MCT in their coffee, that will provide energy for you without breaking the fasting cycle. You will be able to have autophagy at the same time that you have some energy there.

There are things that we can do to enhance the movement into autophagy, and these are a lot of the compounds that we can take that are what are called AMPK activators. So we get back to this idea of AMPK activation. Mitochondrial biogenesis and autophagy are secondary to AMPK activation. That's why I say that you need to be either in a fasting, intermittent fasting, or carb-restriction to be able to get into this.

The compounds that accentuate that, the most well-known of those, is resveratrol. Within that system of Liver Sauce and the Ultra Binder that we call PushCatch LiverDetox, almost every compound in Liver Sauce is an AMPK activator. So when you are doing that system, especially if you are doing that while carb-restricting or intermittent fasting, you have the dietary set-up for it and then you have the nutraceutical amplification of that.

If you are less worried about detox and more worried about losing weight and cardiovascular health, you can do the Keto Before 6 product. Those are also all AMPK activators but a little bit more metabolically-driven.

There is lipoic acid in the Liver Sauce, which is a big detox compound, whereas the Keto Before 6 has resveratrol and berberine which are big for blood sugar control and cardiovascular health.

When we link together these powerful nutraceuticals with our dietary interventions, we get the results that we are looking for really, really quickly.

One compound that we just have to talk about is NAD because NAD is at the core of almost everything that we are talking about. NAD is helping you metabolize carbon substrates, whether they are carbohydrates or fats, and it's taking electrons from those carbon substrates and bringing them into the mitochondria and feeding them into what is called the electron transport chain, which is part of a process called oxidative phosphorylation, and that is how you make ATP. You take electrons from the carbon substrates that are originally energy coming from the sun, you are taking that energy, putting it into the mitochondria, and driving ATP formation so that you can have energy.

When the NAD levels are high, you are able to metabolize these substrates and make energy, but that is just the tip of the iceberg for NAD. NAD, when it is high, activates what are called sirtuins. If you've ever heard of sirtuins, these are longevity genes that we want to activate. The first discussion around those were back when resveratrol was discovered because it was a sirtuin activator. But if you don't have enough NAD, you can eat resveratrol all day long and you won't activate your sirtuins.

NAD is primary before the resveratrol, but really what we want are both of these at the same time – the AMPK activators and we want our NAD levels high. Now fasting, exercise, and a good clean life with AMPK activation helps build NAD, but as we get older it is harder and harder to build that. So we need some precursors to NAD, and they are in the vitamin B3 family.

Niacin and niacinamide are simple B3's. These become ATP, but as we get older it is harder and harder to make them from those cheap B3 vitamins. You need to move more to these direct precursors to NAD. The one that we use is NMN (nicotinamide mononucleotide) and we put that in a liposome with some trimethylglycine (a methylation promoter) and that becomes a very strong way to build your NAD levels. The NAD then coordinates the mitochondria with the nucleus. It coordinates your sleep patterns. It coordinates your metabolism and activates the sirtuins, and it works fantastically well to build that up.

Once we get the toxins out, we want to build the strong energy metabolism with having high levels of NAD and getting the right dietary regimes. It doesn't mean that you have to be a Nazi; it just means that you have to rotate these periods of scarcity of food.

**Mouchet:** Wow! Thank you. One more question: It's not a pure toxin, but what about EMF?

**Shade:** That is a disregulator.

**Mouchet:** What can we do about that? Is there anything that we can do?

**Shade:** There is a lot that we can do about that. There is prevention, and that is EMF hygiene. That is turning off your Wi-Fi at night 100%. If you don't shut off your Wi-Fi generator, you're an idiot. You just have to do that.

Turn off your phone at night. It's called 'airplane mode'. The radio turns off, but the alarm clock still works. It's fine. Everybody uses their phone as an alarm clock now. I do, too. All you have to do is put it into airplane mode and it's not transmitting anymore. So do those two things.

My friends in Europe say, "You can't use Wi-Fi at all. You've got to plug in," but we can't always do that. My building here is all Wi-Fi-ed out. You turn on your Wi-Fi and all of your neighbors are Wi-Fi-ed out, and you get everybody's signal.

Now there is a limit to how much we can stay away from it and how we can keep our body able to resist it. It comes back to NAD.

EMF damages these things called voltage-gated calcium channels. The guy who does the most work on this is a guy named Martin Pall. He is at the University of Washington I believe. You can find a lot of his work online. He publishes books, and you can download them for free to learn more about that.

Calcium is supposed to be pumped out of your cell all of the time. You have high calcium on the outside of the cell and high magnesium on the inside of the cell. Calcium and magnesium are this yin-yang pair. Calcium is stimulating and magnesium is relaxing. Calcium is outside the cell, and magnesium is inside the cell. Sodium and potassium are the same. Sodium is outside and potassium is inside.

You maintain those gradients. There is always compartmentalization in a healthy system. Loss of compartmentalization causes loss of vitality and then death. When it all comes all together into a big mush where it's all mixed together, that is when you are dead.

These transporters that are supposed to keep calcium out get nailed by EMF and the calcium rushes into the cell and creates inflammatory reactions and the whole energy of the system goes down and all of the dysregulation starts happening. What fixes those transporters? NAD.

So you are consuming NAD all the time to rescue yourselves from the EMF. So you need to keep the NAD levels high. It goes right back into all of the same things. So it's intermittent fasting, carb-restriction, AMPK activation, and building NAD with NAD precursors. Then you will be able to live through the EMF very well.

**Mouchet:** Wonderful!

**Shade:** Let me just give two other naturopathic things for EMF, and that is how to clear your body. All of these meridians and all of your electro-chemistry is getting jammed by that. At a cellular level, yes it is NAD, but all of the meridians get screwed up by the EMF, too.

Go outside and do grounding. Put your bare feet onto the soil or onto the grass, and then sky gaze. Look into the blue sky while you are grounded onto the ground. The blue sky – even when people are doing all of these blue-blocker glasses and things (which you only should do at night because you only need blue-blocking from all of your devices). During the morning, the blues will activate your adrenals and wake you up. So looking into the sky will ground you and reset your meridian.

Nothing is more powerful than looking right at the sun, but you can only do it for a couple of seconds, about an hour after it comes up and about an hour before it goes down – right in that window there. Just look for a couple of seconds and that resets everything. That is the big electromagnetic generator. When you tune yourself to that, everything fixes itself. A lighter version of that is just standing in the sun, gazing at the sky, but getting the grounding going. That is a great, great reset.

**Mouchet:** That is amazing! I love it! Thank you.

**Shade:** You are welcome.

**Mouchet:** Honestly I thought that this would be a little easier. It's more complex than I thought.

If people want to take some steps, can they find their way on your website so they can know what to take, or do we all need to go and get a healthcare practitioner?

**Shade:** A healthcare practitioner will lead you through complexities if you have a difficult case. I laid out all of this stuff because you have readers who know a lot, and sometimes they want to know all of that stuff. Sometimes it freaks them out knowing too much.

You can go to [www.QuicksilverScientific.com](http://www.QuicksilverScientific.com) and get an account there. You can buy retail. If you are in Europe you buy through [www.LifeExtension.eu](http://www.LifeExtension.eu). If you want more education you can go to YouTube and there is a Quicksilver Scientific channel where I have all of these lectures and you can learn about all of this stuff.

If you just want to go and detox and you want to keep it simple, that PushCatch LiverDetox, one box is not your whole detox; it's just in bite-sized chunks. You are going to want to do at least one to two months. That is going to take you two to four boxes. You just follow the instructions. You either titrate up (there is level one, two, and three) or start at level two if you are pretty healthy, and just do that. You can follow the instructions. It's ten days on and four days off. You might want to add glutathione into that, and that will do you really well. If you just do those two together, that is really strong. If you have known inflammation or anxiety, you can add CBD on.

You will see that this is really easy. When you take your Liver Sauce, you just take all of the other add-ons along with it. A half-hour later you take the Binder, and everything is cleaned up. You just do that twice a day. That is a very common detox. I use PushCatch, glutathione, and CBD, and that will take tons of stuff out of your body.

Then if you just couple that with some intermittent fasting – just skipping your breakfast or skipping your dinner or eating lower amounts and give yourself a nice range between dinner and breakfast – you will find a lot of that metabolic aspect. In that mix there are plenty of AMPK activators to give you the help there.

After a couple of weeks of doing that, add on the NAD Gold, and that will supercharge your system. Then when you are done with the detox, keep going with the NAD gold and you will have plenty of energy.

**Mouchet:** Wow! That sounds good.

Did you want to add one more thing about water and different types of water?

**Shade:** Water is a tricky business to wade through as far as what goes on out there in the marketing world. There is a lot of talk around structured water. I know you interviewed a guy yesterday who we talked about, Clayton Nolte. He's got his structured water units that he sells. There is Gerald Pollack who lectures a lot on structuring inside your body and how your body structures water.

What breaks that structure down? Toxins and EMF. So these things like being in the sun and detoxifying help to rebuild the structure inside your body.

Just being clean is a way to structure yourself. Then you can go into these devices that help structure your water, like the ones that Clayton sells. Then there is really high-end stuff like deuterium-depleted water, which I'm drinking right now. It costs \$60 for a two-liter bottle, but that is removing background radiation deuterium that has built up in the environment.

Deuterium goes and blocks your mitochondria. It blocks the ATP synthase in the mitochondria. So deuterium-depleted water allows your mitochondria to work better.

We will see that technology emerge a little bit more for the next couple of years, but the most important thing that you can do is just get yourself clean water. I have an under-counter reverse osmosis unit in my home. I have a tabletop unit here in my office. Reverse osmosis or distillation takes a lot of junk out of your water and keeps a really clean water for you.

As long as you have enough minerals in your diet – whether it's sea salt or a French seawater called Quinton that I remineralize with – you will be fine. People used to worry about distilled water, but that was back when people were avoiding all salt and using distilled water, too. That's just some simple things around water.

Get yourself some clean water, and the next step beyond that is starting to structure your water. The highest-end thing is deuterium depletion.

**Mouchet:** Good. I think that's it. We could talk for many, many more hours, but I think it's time to stop.

Dr. Shade, thank you very much for spending all of this time with us today and sharing all of your expertise. I think that this will be very, very helpful for our audience. We can all start taking better care of our detoxification system to stay healthy.

**Shade:** Brigitte, it was great talking to you. If people contact us, we can also put them in contact with different practitioners to talk to or answer any other questions on the products.

**Mouchet:** Definitely. Thank you again. This is Brigitte Mouchet with the Solari Wellness Series. Thank you for listening, and take good care of yourself because it's more fun to be well.

## **MODIFICATION**

Transcripts are not always verbatim. Modifications are sometimes made to improve clarity, usefulness and readability, while staying true to the original intent.

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