HACKING LONGEVITY STARTS WITH DETOXIFICATION – CHRIS SHADE, PH.D. – #884

Dave:

You're listening to The Human Upgrade with Dave Asprey. Formerly known as Bulletproof Radio, actually not me that's formerly known as Bulletproof Radio, but the show was formerly Bulletproof Radio. I was formerly known as the artist formally known as Prince, but that was in a different life, never mind. All right. Clearly, this morning, I've been intermittent fasting. I've not had enough coffee, but I do have nice marks on my arm from the needles, because I was getting some labs drawn this morning, but nothing like a sexy lab. This was just basic stuff because I am going to have a bone in my foot sawn in half. Why? Well, why not? We'll get into that and how do you prepare for surgery and how do you heal way faster than you're supposed to after surgery. I'm going to do a whole episode for you with a lot of details and a lot of extra camera work, but that's coming up in a couple of weeks here, so you'll hear more about that later.

Today though, we are going to talk about blood. We're going to talk about serum, biomarkers and epigenetics, and some really cool stuff around age clocks with my friend, Christopher Shade, who's a PhD, who knows a thing or two about environmental science, chemistry, biology, and how to deliver detox chemicals inside the body. He is the founder of a Colorado-based company called Quicksilver Scientific, that is very well-known for making liposomal formulations of all kinds of things that you can get into the body. If you don't know what a liposome is, you're going to learn.

If you follow me, you probably know that you get way more toxins than you used to if you were alive a hundred years ago, and maybe you could help those detox systems work. I think Chris is one of the masters of doing that from our modern set of people who know a lot. He has patented a mercury speciation test to figure out what kind of mercury you have. Chris, welcome to the show. I'm excited to chance to pick your brain.

Dr. Christopher Shade:

Well, thank you, Dave. It's a pleasure to be here. I'm happy to start talking about all these things, especially Home Depot.

Dave:

I heard a rumor that your favorite detox method was actually the coffee enema. Is this true?

Christopher Shade:

Well, I just don't like to take anything in the ass.

Dave:

How would you know?

Christopher Shade:

Well, I just have a natural aversion to it and every time I try, there's some sort of like, "I don't think this is really working."

Dave:

That was the most inappropriate question I've ever asked in almost a thousand episodes, but it was funny, so I [crosstalk 00:04:00].

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Christopher Shade:

I would be the guy for it.

Dave:

It turns out, the reason I asked about coffee enemas is that this is a long-standing thing in the world of health. People say, "Well, if you use coffee as an enema, and by the way, there are lots of people who like my mold-free coffee stuff for that reason, because at least there's less toxins, and they say it's because it raises glutathione in the liver. My take on it having tried it a couple times is that, A, that's way too much caffeine absorption, B, you really should cool the coffee off first, and C, if you look at the science behind it, it doesn't appear that it meets the risk reward much less that's gross kind of thing, but the rectal delivery is good.

We're going to get into some more of how do you really increase glutathione that way. Also, there are some things that absorb very well rectally and I'm not opposed to that, and glutathione is one of them, but I just wouldn't say coffee is one of them. I know that you've patented and discovered and explored all these different delivery mechanism, but I think it's interesting. I just don't like that one, but medically, there might be some things you'd put there, but you can take almost anything you want orally and it'll absorb if you craft it the right way.

Christopher Shade:

Exactly. I see a lot of the people who are really sick, they get to where their bile flow jacked up. When we talk about detox, that whole detox being totally coordinated with bile flow, that's a major thing. Toxins leave on bile flow outlets from your liver, and so people who get locked up in there need some help. They turn to the coffee enema because it supposed to open that up. I do believe that it does, it opens up and forces some bile flow out of the liver, but there's so many other products that do that as well.

Dave:

Oh man! You said some words that get me really excited bile flow. You are a very well-schooled detox specialist for all kinds of toxins. bile flow was in the Bulletproof Diet, my first big books saying that, "Guys, this kind of matters." But it seems like even now 10 years later, it's not something that you hear about except in some functional doctor's offices. Can you walk through bile flow and how you might turn it up and why you might turn it up?

Christopher Shade:

Totally. A lot of my friends who are naturopaths always love that I talk about bile flow. The naturopaths always talked about opening up bile flow and you look to the use of bitters not just in cocktails, but where'd that come from. That was the cure all in the early 1900s, late 1800s. How did it help so many different things? Because it opened up bile flow. Then we got to talk about toxins in the liver and biotrafficking in the whole body. It's actually called canalicular trafficking. It's like drug trafficking. I was trying to make it to that conference to speak, but I got picked up at Denver International Airport, and I was arrested for canalicular trafficking.

Dave:

Nice. Dad jokes don't stop. Functional medicine dad jokes, it's like a Venn diagram of six people, but half of them are here in our audience, so it's all good.

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Christopher Shade:

Yeah. How many people get? Where does that all come from? Inside the hepatocyte, if we picture it like a square here, every hepatocyte is fed on one side by blood and it's drained on the other side by bile in the bile canaliculus. If you picture it like an upside down tree and the roots of the tree are the bile tree going into the liver, you go from the common bile duct up into a million little branches into these tiny little vessels called bile canaliculi, hence the canalicular trafficking. Every cell, blood's coming on one side and you're pulling toxins in. These toxins may have been conjugated or processed in the cell, or they may be raw toxins from your food or from the air, and they're pulled into the cell, any further transformations happen there, and then they're dumped out with the bile into the bile canaliculus. There's these transporters that move them out, ones called MRP2, and it was toxins and bile salts.

Then it's sister transporter that works with it, it's called BSEP, bile salt export pump. These are co-regulated, they turn up together, they turn down together. These toxins and bile salts are pumping out of the hepatocyte. Now, there's other transporters on the blood side. One is moving bile salts in. Bile salts, we all think of bile as this thing for digestion and it goes into the upper GI and it emulsifies fats, it's got some digestive enzymes, and any that you don't use in the lower GI, you reabsorb, bring back into the blood, so you don't have to re-synthesize those. You're pulling in bile salts and toxins into the hepatocyte, but there's two doors that push out of the hepatocyte into the blood, and one moves bile salts and one moves toxins. Now, why are they there?

Normally, we're drawing through the liver cell, the hepatocyte into the bile and out. But when certain things block the flow of bile out of the hepatocyte, then these things build up in the cell and cause all of this disruption in the cell and the cell has to get rid of them or it's going to die. The bile salts are detergents that are going to dissolve the cell. The toxins are causing chemical stress and oxidative stress. When they can't go out of the cell, they build up and then they dump into the blood. All these bile salts and toxins rush into the blood. They redistribute into the body. They go to the kidneys. They cause kidney stress. The kidney tries to keep up with them, but then it gets blocked. They go to the skin. They first cause itching. The bile salts lodge under the skin and they cause itching or pruritus.

Then the toxins come out through the skin and they cause rashes. All these toxins are going to the brain too and causing inflammation, neuro inflammation and brain fog and anxiety and stress. That's all because you're not processing the toxins and dumping them out with the bile and that's called intrahepatic or in the liver cholestasis versus a gallstone, which is extrahepatic cholestasis. We need to encourage the bile flow, so we got to talk about what blocks the bile flow and what opens the bile flow.

Dave:

All right. You're nailing it, Chris. When people think of bile, it's like, I basically was puking and I had some green stuff, and that's all we know about it, but it's necessary to neutralize pH of stomach acid. It's necessary to break fats into tiny little globules that can be absorbed throughout the body. When your bile system is optimized for you to preserve bile because it's hard to make bile, that means you'll absorb those toxins more. This is a major part of what I write about, it's like, "Look guys! If you're optimized for famines, you'll recirculate your bile better, you save it."

Unfortunately, it's like used motor oil. It's full of all that stuff that makes it turn black, so we've got to be able to make more of it and dump more of it out, and to your point and where a lot of your work is, is how do you process the toxins, so when they get into the bile, they're already detoxified as much as you can and you can clean it out? It's a complex system, but this is, it's like one of the types of changing the oil filter in the body that you really would want to do. Tell me, how do I turn up bile flow? How do I get more bile manufactured?

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Christopher Shade:

Yeah. We want to get more bile moving out of the liver and then we want to bind bile in the GI tract and bind all the toxins in the GI tract. How do we increase bile flow out of the liver, and then one of the things we want to do is bind it in the GI. We're binding, not just bile, but toxins in the GI. All right? Moving bile flow. We want to stimulate bile flow with things like bitters. Traditional bitters like gentian, one that I use a lot is myrrh, dandelion, all those bitter flavors that they have in the cocktail bitters we also have in medicinal flavor.

Dave:

Okay, I have a question for you. Is the feeling I have towards mandates. Does that count as a source of bitterness?

Christopher Shade:

It doesn't. That kind of bitterness, I think because it comes with all this sympathetic stress, like when we want to kill things, then it actually blocks our bile, so it's like a bitter anti-bitter.

Dave:

All right. Biological bitters, unfortunately, sociological and government overreach bitters don't count.

Christopher Shade:

No.

Dave:

Okay just making sure.

Christopher Shade:

Those kind of bitters actually puts you into sympathetic stress, because that's actually one of the breaking points of bile flow. Biologics, the biologics that we want, bitter compounds are one of them. Phosphatidylcholine choline is always being donated from the cell membranes in the hepatocyte into the bile flow to keep the bile flow fluid. You'll hear people talk about sludgy bile and sludgy gallbladder. That's not enough PC. Bitters and PC are going to keep these things moving and we're going to use those in detox protocols, but then when they get down to the GI tract, we're going to use a bunch of binders. Things like charcoal, zeolites, chitosan. If you're using prescriptions, it would be cholestyramine and welchol. Then the one that we made, specifically, metals is IMD, intestinal metal detox, which is a thiol-functionalized silica. Get the toxins in the bile moving and then trap them in the GI.

Dave:

Let's pause for one second there. The kind of toxins that we are talking about here, I'm going to walk through my map of toxins and I want you to poke holes in the map or bless it, so that we're using the same language, so all of our listeners know what we're talking about. You have exogenous toxins from outside the body, which would be metals, they'd be chemicals, and they'd be things like mycotoxins or food-borne toxins of any sort. Then you have endotoxins, which are made on board usually by gut bacteria, lipopolysaccharide, which I keep talking about as one of those things with leaky gut, that would be like the biggest internal source, as well as maybe onboard infections you could count as. Is that the universe of toxins?

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Christopher Shade:

Yeah. That's the general universe of toxins, but then we're going to add to them, and endotoxin is going to come in as like the Darth Vader of this whole thing. You've got the environmental toxins and then endogenous toxins, and so I'm going to add to your endogenous toxins. First, take your endotoxin. Endotoxin are parts of bacteria. As bacteria die and break down, parts of their cell membranes get absorbed across leaky gut barriers. Now they also get absorbed across your oral cavity when you have periodontitis or when you have urinary tract infections. These are all large sources of endotoxin. It's also called lip-polysaccharide.

I like lipopolysaccharide more because endotoxin implies that we're making it endogenously, but it's the bacteria parts, and the bacteria parts are getting in. The problem there is that the immune system sees those parts as actual bacteria, and it recognizes their chemistry, and it sounds the inflammatory alarm to try to kill them. The inflammatory alarm is a pro-oxidant alarm. It is making superoxide, hypochlorous acid, things like bleach, and it's trying to go kill them. It turns a pro-oxidant activity and turns down anti-oxidant activity. Now, the problem is all the detoxification reactions are part of your anti-oxidant system.

Glutathione, superoxide dismutase, all the antioxidant enzymes, all the detox enzymes, all those are turned down when you turn up that inflammatory alarm, because the endotoxin is up. All right. Now, there's a couple things that come from that. When that happens, that happens at a systemic level and a cellular level. Say at a cellular level, you have, let's say on a scale of 1 to 10, five toxin units of cellular toxin of mix of metals and pesticides and mold toxins, and you're doing okay with that because your antioxidant system is running at an 8.

Dave:

Let me pause you for one second. You and I both lecture at the American Academy of Anti-aging medicine, all that stuff, what percentage of people listening to this would you imagine have meaningful amounts of metals or molds or these other toxins you're talking about?

Christopher Shade:

Everybody's got a meaningful amount. Everybody on this podcast is sitting at like a 3 to a 5, but many are-

Dave:

Out of 10, right?

Christopher Shade:

Yeah.

Dave:

There you go, okay, that's important. Everyone listening, even if you feel okay, this stuff builds up because of the world we built, just flat out.

Christopher Shade:

But then so many people will come to me, and they're biohackers and this and that, they're like, "Oh my God! I did some testing, and I'm way up here, because I started eating paleo and I'm eating all this tuna, I've got all this mercury," or, "My house had a flood and I've got all these mold toxins," or, "I live in the

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central valley of California and I've got all these pesticides. I'm down in Orange County and I've got all these gasoline chemicals." People can have surprisingly high amounts even when they're eating good. But then, you got back to this story of your relative detoxification rate at a cellular level. You've got a 5 toxicity and an 8 detox level. Everything's fine, because your detoxification is exceeding your toxification. But then the endotoxin comes in and it takes your 8 down to a 3.

Now, at a cellular level, your ability to resist the 5 is down to a 3 and boom! It hits you, and all of a sudden everything falls apart. This happens when people start getting infections and bad oral health and GI health, then stuff they were handling before they can't handle anymore. Then, when we get to talking about hormones, because we're going to talk about longevity, a lot of these triggers for detox like, you and I know NRF2 turns that detox system up, but NRF2 has a co-regulator called the PXR, or the pregnane x receptor, that's regulated by pregnenolone and progesterone. How many 45-year-old, 50-year-old women do you know who all of the sudden are super toxic from their amalgams, from their environment, blah, blah, blah, because hormones could bring your 8 down to a 3 too.

Dave:

You actually hit the most important longevity thing you could have talked about, which is if you have a highly resilient system where your detox ability is a 10 and your toxin intake and toxin onboard production is a 1, you can get in a car accident and have some poor Ebola on you and you'll probably live. You might not like it, but you'll probably live and not dying is anti-aging last time I checked. If you're walking around though, and you're like, "Oh, I feel fine. I met a 6 detox and a 5 tox, you're walking around on the edge, but you feel just fine, and then you're easy to kill. I want to build a world full of people who are really hard to kill.

Christopher Shade:

Really hard, and the resilience is the biggest thing for me in this whole idea of this longevity wheel that we've created—everything is about creating resilience. As we get into all these little things that go along with detox and we get into more endogenous toxemia, all that stuff produces resilience. All right. Endotoxin does that at a cellular level, but that's the main culprit for doing it at a liver level for stopping that transit of the toxins out into the bile. When the endotoxin's high, it's hard to get anything done on a detox level. That's why you have to clear your gut.

Dave:

It's actually funny. If you learn to think like a computer or especially a network engineer, there's a whole bunch of interrelated systems. If one of them is broken, it'll have an effect on the other. But when you look at detox pathways, you look at aging, it's a very similar mindset, way more so than you would think, even though humans are clearly not meat robots, and we're not meat computers and our brains don't process information like a computer, but the idea of managing a complex system instead of a single thing, it's important and that means we have to have models to do it. That's how I would teach engineering when I taught network engineering classes.

One of the things [inaudible 00:21:20] want to have you on the show is that you have your longevity wheel here, which is a really cool way of looking at aging and longevity. Most people who are listening have heard of, or maybe even read Super Human, which was my big anti-aging book. I think there's a great synergy between your longevity wheel. It's quicksilverscientific.com/longevity-wheel. Do you have a better URL for it? It's a freebie thing.

Christopher Shade:

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It's freebie thing. That's really the best one right now. I think.

Dave:

Well, no one's going to remember that. Just go to quicksilverscientific.com and-

Christopher Shade:

Just look for the longevity wheel. Yeah, and you'll see this 6-part thing in there. It starts at the top, it's NRF2 and AMPK, which is what we're talking about, it's detox. It's detox and metabolism, and then it goes to NAD then sirtuins then telomeres, then senolytics or senescent cells and then neuroendocrine. Really, three of these are defense and cleanup, and that's NRF2, AMPK, telomeres and senolytics, and three of them are called charging up the system, which is NAD Sirtuins and the neuroendocrine. I put the detox at the head of it because when you're all messed up, if you've got a high toxic load or you've got a high endotoxin load, then none of this other stuff can happen.

Dave:

I almost want you to it to repeat that, you don't have to. The idea that that's so weird, if I have a toxin that prevents my cells from doing the repair and detox they're supposed to do nothing will work very well, so what's the point of trying to get stronger and extend life if the basic things aren't working. If you put a stick in your spokes and you're saying, "I'm going to pedal harder," it doesn't matter how hard you pedal. It's just not going to work until you pull the stick out, and so much of aging is pulling the stick out to let the body do what it's supposed to do, and then becoming stronger. I feel like you're one of the few guys who's really got that algorithm down because you started out looking environmental medicine and detox pathways, and when you see the effect on aging, it's profound. You put that right at the top of your aging model instead of somewhere in there, which is it's really cool.

Christopher Shade:

[Inaudible] about these other things and you're like, "Well, I want to get into some of the sexier things." Then you get into them and you see they're all predicated on detox. You're wondering about senescent cells. Well, how they get senescents? Because of toxins. Telomeres, what damages telomeres? Toxins. What repairs telomeres? Having a high glutathione and a highly-reduced glutathione level. What are the things that, when we think about senescent cells and they're spreading all this energy of zombie-like senescents, you can either kill them or you can reverse them at a senescents and you do that by what? Cleaning up the cellular terrain and they come out as senescents. Even when you kill them, you're killing them with the same things that you're using to up-regulate NRF2. It really all becomes predicated there.

I started with the NRF2, the detox stuff, and then I started giving the AMPK around fasting and keto, and those are totally overlapped. That was where I was going to say there's one more class of toxins and they are endogenous toxins, but it's old, worn out, mitochondria, old, worn out golgi apparatus, the cellular organelles, it's accumulation of misfolded proteins, and these are all things that build up in the cell and they become massive insulin inflammatory and cellular down regulatory. They take you down a bad path, and how do you fix them? By autophagy, by activating AMPK, which is almost a co-factor with NRF2. They work totally together.

Then that clears out old accumulations of proteins that get into the mitochondria and damage the mitochondria or the held in lysosomes are damaging everything in the cell, and they clear all that stuff out and they make way for making new mitochondria and higher density of mitochondria that comes with the sirtuin stuff. AMPK and NRF2 are step one, but then to really get that codified into more, better mitochondria, then you need sirtuins to come on top of that, and for that you need NAD. They're

secondary after the cleanup of the environmental toxins and after the cleanup of the bad cell parts and the protein accumulations.

Dave:

Deborah from the Upgrade collective here, my mentorship group, our live audience is asking, do you have to follow the longevity wheel in order here? It seems like it's a framework you would do it all at once. How does that work?

Christopher Shade:

In orders, first, to do detox. Then work on, interleave that with AMPK and then NAD sirtuins and neuroendocrine stuff. That's when we did this 3-month program with the age clocks. We did a month with this, is our detox regimen, our basic one, PushCatch liver detox. That's liver sauce that activates cellular NRF2, activates bile flow and activates some AMPK, so that toxins move out, they move through the liver and then a half-hour later you come in with your binders. You just do that a couple times a day. Then the next month, you move to a slightly different liposome set that's more AMPK dominant, so you're moving more fat out, you're doing more autophagy, and then you're adding a lot of NAD boosters, and then after that, you graduate.

Dave:

It's a very logical approach that says maybe you should take out the trash before you remodel. It's shocking.

Christopher Shade:

Even in the cell, it's like with the unfolded protein response, you're making little, I always call proteins are like little origami swans. Yeah, you make this long thread of peptides, then you got to fold it all up intricately and perfectly. Like a whole bunch of them are like, "Oh, that's no good. Hold on, throw that in the corner, make another one. It's like a writer," and they build up. If you don't clear those out, you clear those out during fasting and exercise and all the things that raise AMPK activity, that's when you clear those up. If you don't clear them up and they get so full in the cell that they make themselves cleared up, you usually end up killing the cell.

Dave:

It's Funny. In the model of aging that I use as a framework for Super Human, two of the seven pillars of aging were intracellular and extracellular junk buildup. You just nailed those, but calling them a toxin is really smart. You also mentioned a study you did that I wanted to mention, because you validated it with true diagnostic, and the founder of true diagnostic was just on the show, Ryan was on. You also worked with a serum biomarker lab. I'm trying to say its name, Ginfinity. You actually tested your protocol, so people are doing, this is a 60-day protocol? Or is it a 90-day protocol?

Christopher Shade:

It was a 90-day protocol.

Dave:

Okay. What did you find out in terms of aging when you just detoxed the way you described? You're listening to The Human Upgrade with Dave Asprey.

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Christopher Shade:

Yeah, yeah. We doing that PushCatch. We were still doing PushCatch, but more with this AMP move and some NAD boosters and the third month was more NAD boosters. We were able to reverse the biological aging. We used a couple of the age clocks, the original Horvath clock, the new DunedinPoAm, I don't know who names these things, but it's called DunedinPoAm.

Dave:

This is why scientists shouldn't do marketing. I'm just saying.

Christopher Shade:

Yes, exactly, exactly.

Dave:

Dunedin.

Christopher Shade:

There was thousands of shifts. There was 6,000 genes became more methylated, 4,000 became less methylated, all this change around in all these gene structures, and the reality is we're just getting to know these things and how these things all work. But the markers went the right direction and we had a lot of change, which was interesting in some of the immune cell subsets. Monocytes, natural killer cells, beta cells, all had these positive correlations, and that's one of the nicest things. We're all in this immune problem right now. We got this global immune fear. Well, turns out immune integrity is tightly linked into your toxin load. It's tightly linked into your glutathione levels because as glutathione levels go down, your immune cells, they shift from this TH1, this ability to go on and kill things over into this reckless inflammation called TH2 and TH17.

As toxins come in, a high-loader lowering glutathione that's shifting your immune cells and then AMPK. We talked a little bit autophagy and autophagy during AMPK activation will take like an old mitochondria that's beat up and it'll kill it, dissolve it and release all the basic constituents for making new ones. Well, it turns out, that's what you do with viruses, bacteria, parasites, you pull them in, you tuck them into an autophagosome, which is this little liposome that you put all these dead parts in then break it all down in, and you the pathogen down and then you let your immune system taste the pieces of it and make antibodies to it. NRF2, detox, AMPK, internal detox, or biological detox all relate into immunity, so when you work on those, you strengthen your immune system.

Dave:

How much aging did you fix in your study?

Christopher Shade:

I don't know. We just got the results back and I don't know. They have to go and they have to add the three months that they did, this stuff is really new.

Dave:

Yeah. It was brilliant [crosstalk 00:32:02] told me about it.

Christopher Shade:

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Yeah. It's very cool, but we had these huge correlation, really low, small correlation coefficients mean high significance, and so there was this big change. Then you get into the serum markers. I just got to tell you, we're a little early in on the serum markers, like a year ago, nobody had any of them. People were working with serum NAD and they spent all this time, and Nady Brady and Sinclair and all these guys, and they were like, "Guess what? Serum NAD doesn't mean shit." It actually does, but it only because it's ... NAD is an intracellular marker and it being on the outside at all is like a cell danger signal. Having it on the outside is a little bit of a stimulation to your immune system, but it doesn't mean anything for your intracellular NAD levels.

We'd started this and the guy just come out with this whole blood NAD that he was all excited about. We did the pre and we did the post and then he's like, "Oh, the pres are all no good." I'm like, "Oh my god, how much money did he give it?" The sirtuin data is starting to show something and there was something with the serum NAD and the sirtuin, but we're still pulling that all apart. We did see, there's this group and according to the serum, NAD, if you were in one side of this, and then you saw sirtuins go up and inflammation going down during this study. Another wing we're not as responsive, so were still taking that all apart. It's like we need another year on these markers and know, are we running these on white blood cells? Are we running them on red blood cells? Are we going to do a brain biopsy? We need something a little better there.

Dave:

It's funny. You're here with Quicksilver looking at detox pathways, we know from abundant observations that when people have less toxins and when people detox better, that they die less. Therefore, they live better and we have some interesting evidence that they probably live longer. We've got your Quicksilver minds that they're, you and I are very much aligned on that. Then, we also just had True Diagnostics on the show, who ran the labs for you, but the reality here is something I learned in business school. I'm going to Wharton and I'm not a finance guy, I'm a creator engineering, computer, marketing guy, maybe I'm good at explaining stuff. They made me do these horrible finance classes that I still have nightmares about, but what I learned ultimately was that you can make the numbers say whatever you want in finance. You want it to be profitable, just run it through this lens. There's 24 different ways to look at these numbers and say, "You're making money, you're losing money, you're doing this, you're not doing that."

You can get a group of professionals in a room with 20 years of CPAs and they'll all argue over the same basic thing and look at it differently. That's where we are there. That's why I have generally accepted accounting principles and all this stuff in business. When it comes to aging and people say how many years did you lose? Let me just be abundantly clear. What did you want the answer to be? Because I can and find the data in your numbers somewhere to support whatever you want the number to be. I very much respect the science that True Diagnostic is doing, and if you go back 5 or 6 years, "Oh, my telomeres in my blood are looking good." Yeah, those bounce all over the place, it's probably not that reliable.

We're learning, we're putting it all together, and I don't think we're ever going to be able to say, "You actually are really 12 years younger." What we're going to be able to say is, "You have a combination of things in your system that looks about 12 years younger, if you believe in this set of things. If you believe in this set of things, you're 13 years younger and it's okay. We don't know, but we know it's better than it was, and that's the constant movement in the right direction."

Christopher Shade:

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Exactly. The different age clocks, there was one that went the wrong way. They got like six variations on the same stuff, and it's like, "Well, I'll talk about the good one. This one, nobody likes that one anyways." That's what I was hoping for the serum markers. Then you talk to the people they're like, "We feel freaking great." When you get people's eyes open, they're thinking clear, their energy is strong, you know you're moving them in the right direction. You know when you're foggy, tired, looking for your words, you know that's no good. It's really obvious.

Dave:

It's funny how you feel when you wake up and whether you can remember things when you want to, those are pretty important. If you just track those on a daily basis, maybe plus heart rate variability, you probably can have a really good aging calculator. Are you younger or older?

Christopher Shade:

Yeah, I totally bet you're good.

Dave:

One of the things I'm most interested in from that perspective is called P300D, which is one of the things that we look at with at 40 years in. How quickly does your brain respond to an environmental input before you can think about it? It's when you see a spike of electro activity and it's supposed to get longer and longer as you age. It's going to be between about a quarter second and about a third of a second. It's so weird. I have the average ... it's not cognitive processing, it's awareness, because processing requires you to get the data and then do something with it. This is just, how quickly can you get the data? When I say something, you're hearing it in your conscious brain about a quarter second after I said it, there's a built in time delay, and I'm kind of simplifying it there. Basically, I'm saying it's hitting you, but by the time your brain does something to know that it's got it, it's there.

What I ended up doing is testing mine and I have the average response time in my brain of a 20-year-old even though I'm 48. Guys, I'm, let's see, I'm 28 years younger and I can legitimately say that because my brain works that way, right? But I don't think it would be valid. But you can't say there's performance and there are systems things, but it's how you feel and detoxing makes people feel like crap if they do it too quickly or the wrong way, and it makes them feel amazing when they're done with it.

Christopher Shade:

Yeah. Remember that story about the hepatocytes. When you can't move the bile through, it dumps back into the blood and that's what happens to people. They take one supplement like say lipoic acid. Turns up the cell's ability to dump into the blood, but it's doing nothing for the ability to move through the liver and it's doing nothing to bind. This is what we found. You remember years ago, you and I talked at autism one. You were on the rise at Bulletproof and I was just figuring out how to do this by working on autistic kids, the hardest group to do. That was where we learned we had to couple the bile flow to the cellular detox, and then couple that to the binders. Then the one other thing we needed to add in and we were doing it right about then with CBD to stop the neuro inflammation.

Dave:

Yeah.

Christopher Shade:

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We talked about endotoxin blocking the flow of bile, but we got to talk about the other stuff that goes into that. All right.

Dave:

Okay.

Christopher Shade:

One, we talk about bad detox there. Bad detox is we push it out of the cells, but we don't process it through the liver and bind it in the GI. All right. We got to put those two in. Again, what blocks that movement out of the hepatocyte into the bile? We talked about inflammation. Now, we can also talk about just stress, and let's bring in hormones too. All right. Estrogen excess will block that, just the same way that endotoxin does.

Dave:

Okay. Let me ask this. Is estrogen a toxin?

Christopher Shade:

Estrogen on its own can be a toxin.

Dave:

Yes, it can be.

Christopher Shade:

Yes. We've all been there. You've been there.

Dave:

It's not politically correct to say that, but estrogen is not good for you. Of course, if you're a woman, you need to have a certain amount of it, but a little bit extra will trash you. If you're a guy, you need very little of it and the more you have the worse your biology works.

Christopher Shade:

Yeah. Now go to the brain. What does estrogen do in the brain? In the brain, we have on the autonomic level, we have sympathetic and parasympathetic in our whole system. Sympathetic is fight or flight. Parasympathetic is rest, digest, repair, regenerate, detoxify. We measure that by heart rate variability and things, that's the autonomic nervous system. Now in the central nervous system, we have two neurotransmitters that go with that. We have glutamate being the fight or flight sympathetic one, but it's also memory and being sharp and stuff. We need glutamate, but too much winds up anxiety and irritability. GABA on the other hand is our Zen neurotransmitter, and that's calming us down and that's feeding digestion or all these things. There's go and there's calm. Now, what does estrogen do? It winds up the glutamate receptors, so they hyper fire. What does that do in the absence of a counterbalance? Makes you irritable and anxious, and makes you sympathetic dominant and locks your bile flow. In fact, all sympathetic dominant fight or flight locks your bile flow.

The antidote for that is progesterone. Progesterone, when it goes to the brain, it amplifies the GABA receptors. You've got that hormone thing going on between those two right there. Any stress will tend to lock things up and any calming will tend to open things up. Interestingly, if you taste

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progesterone, it's super, super bitter. It's opening up the liver. Progesterone is wonderful for opening up the bitter and for using with all these bitter herbs. Why are we talking more about women? Women get more cholestasis than men. They have more gallbladder removals than men. They have more of a problem there. There are all these things that block detox is being all stressed out.

Dave:

Do you know Dr. Michael Platt?

Christopher Shade:

No.

Dave:

He was on the show somewhere in the 600s and he had 40 years of medical practice, board-certified internal medicine guy, and you could basically say, "I have this," and before you could finish what the problem was, he'd just say progesterone. The whole episode, it was fascinating. It's like, "Here's what progesterone does. Oh, you have muscle tension? Put some progesterone there," it goes away. It's kind of a magic thing.

Christopher Shade:

No. It really is magic, and it's magic for men too, for sleep, for relaxation. In fact, we're releasing our female hormones, since we have a complete female bioidentical replacement therapy over the counter that's based on a nano-DHEA and then a topical nano progesterone.

Dave:

I was going to ask you about that because several people in the Upgrade collective are saying, "What's the take on this?" This over-the-counter hormone replacement by going upstream from where the pharmaceuticals are, so tell me what you're doing for women's hormone replacement.

Christopher Shade:

Yeah. This has been awesome. I developed this years ago, but I had to get some patents in on it because of we're going to do testosterone through the compounding pharmacy. I had to get that all in and that put off release, but I've had a couple people on it for two years. On one side, we have DHEA, the product's called DHEA+ female hormone tonic. Then the other side, we have progesterone plus replenishing serum. Progesterone, you have to do topical as an OTC. We did a nano-serum there, topical. This morning, I was pissed off and being a bit of a prick, and so I did a little bit of that topical, it calmed me down.

Now, how do these systems work? The DHEA+ is DHEA in the nanoparticle. Now, what that means is when you take a capsule of DHEA, as it's getting absorbed or while it goes through the liver, it becomes DHEA sulfate, which is what you circulate around. But in a nanoparticle, it goes in right through the oral cavity and right in the upper GI, it's just absorbing right in as raw DHEA and raw DHEA is what transforms into estrogen and testosterone. When you take this DHEA, it immediately fills up estrogen and testosterone and preferentially through testosterone, because we couple with it chrysin, the aromatase inhibitor.

Chrysin is very similar to the story of DHEA. Chrysin was known as this aromatase inhibitor in cell cultures. But when you take it orally, it sulfates or glupioronadates as you absorb, it doesn't work very

well as an aromatase inhibitor, but in a nanoparticle it does. The combination of the DHEA and nanoparticle in the chrysin is leading ... after you take it, you get high levels of DHEA, high levels of testosterone and moderate levels of estrogen. Then we add also dim in with it to make sure that your estrogen metabolites aren't going into the two hydroxy pool. We add with it also specific adaptogens. We do fermented Korean ginseng, maca and dong quai. That's all to control where all of these things go. That right there is going to fill up DHEA, testosterone, estrogen, and we have nano [inaudible 00:45:59] in there. That handles all of that.

Dave:

All right. I'm going to pause you for a second here. I have some questions about this. DHEA and pregnenolone are the mother hormones. These, all the other hormones are made out of those two things. You can buy DHEA over the counter and as you mentioned people take it, it turns into DHEA sulfate. I first heard about DHEA when I was about 17, and I said, "Oh, that sounds like an interesting thing," and yeah, because I've been a vitamin nerd mostly because my biology didn't work very well, so I'm always interested, and I tried DHEA. As a 17 year old, you shouldn't lose your libido, but within two days of taking it, I'm like, "That's weird." I didn't take it for years, and even now, my DHEA tests low, but if I take any form of DHEA that I've tried, my labs will go up, but it has the same effect, and basically, I'll grow boobs from it.

Clearly, I'm turning DHEA into estrogen, so I've always told people you should get your labs before you do DHEA. But what you do, what I love about your work is like, "No, it's about the delivery system." If you get the right thing to the right place at the right time, it does something different. Your nano-DHEA, when it's paired with these well-known things like chrysin and the adaptogens, does that mean that it's going to go in the right direction? I'm not a female, but is there a dude DHEA coming up?

Christopher Shade:

Yeah. Less of it ... yeah, we've run a bunch of labs and less of it goes into estrogen, and you need to keep a certain amount of estrogen. Women without estrogen will lose all their libido, they'll have vaginal dryness, they'll have thinning of the skin, and a lot of these aging markers, it's just about having the right amount. You get this moderate amount of estrogen. The testosterone goes to the high-end of the natural ranges like in the 50 to 80 range, depending upon the person, and the DHEA runs super physiologically, 500, 700, which is fine for DHEA because DHEA has all these metabolic effects. It affects both estrogen androgen receptors, and it does all these different good things for you.

Pairing it, and we went pairing it with different things like different adaptogens in there, and it had different effects. When we got the right amount of adaptogens, we got all the great effects. In fact, ginseng will increase your ... it'll increase the hormone receptors, so your estrogen and androgen receptors actually go up. For a given amount of hormones, you get more hormone activity. That's one of the x factors that we have to get to understand, because we can measure serum levels, but we can't measure receptor levels, so what modulates the receptor levels? We tried a couple of different formulations along with the DHEA and we found this really sweet spot where women's power goes up, their libido goes way up, their energy, their concentration, all that's in there, and then all you got to do is have the right amount of progesterone to chill the thing out, and that's the nano-topical progesterone.

Dave:

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Wow! All right. I'm going to try your progesterone. I'm assuming that you can use progesterone, your formula versus whatever is out there. When should a man use progesterone versus a woman use progesterone?

Christopher Shade:

You're going to use it whenever you're irritable, if you're snappy, if you're not sleeping well and a lot of doctors give men progesterone when they need sleep. It's any of those too much go button, not enough calm, then you bring in the progesterone. If you take a lot of testosterone, especially if you keep your estrogen low, progesterone is a great moderator to that to make you a little bit more compassionate, a little bit softer without any of the feminization and none of the gynecomastia. In fact, some of the doctors give ... if they're giving a lot of testosterone, they'll give progesterone with it and there's data on it increasing erectile function.

Dave:

Oh, that's interesting. I guess you just have to rub the cream in the right way and that solves the problem?

Christopher Shade:

Yeah. Yeah. That's it.

Dave:

You totally took the bait there.

Christopher Shade:

That's it. That's it, I'm sorry, I totally missed that for a second. It's a rapid vigorous rubbing.

Dave:

I took you right out of science mode into 7th grade mode just like that. There's a couple questions from our audience here. The question from Robin was, can you take too much progesterone?

Christopher Shade:

Yeah. Look at the two. On the DHEA, you have the more go hormone switches, DHEA, estrogen and testosterone. On progesterone, you have the slowdown switches. Fortunately, you can judge a lot of that by your mood and your temperament and your sleep. If there's not enough sleep, more progesterone. If there's snappiness or anxiety, more progesterone. If you're too tired and slow, sleeping a lot, you're not really sharp, maybe back off on the progesterone, turn up the other side. But progesterone, like estrogen, Dave and I talk about really keeping that in a zone. Progesterone is much more forgiving. One of the things that you'll see when you look at the hormone declines over time is, in women, progesterone declines precipitously after about 35, and estrogen declines more slowly. In the 30s and 40s, you're in this mild estrogen dominance and eventually they're both in the toilet.

During that timeframe, sort of 35 as you go into perimenopause around 45, progesterone is always welcome on board. Like I said, for detox, it's hitting the pregnane x receptor and enabling NRF2, which is your master switch to turn up all your detox. I believe in a lot of progesterone use. The general instructions are take this before bed, because it makes it a little bit more tired, but anytime you're

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amped up and you need to be a little bit more balanced, some progesterone onboard gives you that balance.

Dave:

All right. This is the second time we've really gone deep on progesterone. Using it on occasion is fine and using it regularly before bed is fine. I will say that using it when you have just a lot of muscle tension for whatever reason, yeah, you should have your magnesium and your electrolytes and all that kind of stuff. But if there's a knot that doesn't want to go away and you put some of that on, it does seem to help it. It works directly right there and I think your nano formula, which I'm pretty excited to give a try to, it is your female hormone products. Can I take that? It says that aromatase inhibitors, adaptogens, there's nothing in there that's going to be feminizing, so I could try the female stuff?

Christopher Shade:

I would keep it low because here's the thing, and that's where I'm trying to dial this in for men. The nano-DHEA becomes estrogen very quickly.

Dave:

Okay.

Christopher Shade:

The aromatase inhibitors is slowing that down, but the aromatase inhibitor, the chrysin metabolizes quickly. It's out of the body in two hours and the DHEA persists. I actually recently because I stimulated a whole bunch of stuff, I was trying to do a little adrenal reset, I was injecting some amniotic fluid and growth hormone and [inaudible 00:53:33] and that turned up everything, and I had to chase that with every hormone under the sun to get the body all up with all of those signals I just gave it, and so I was taking it. I'm trying to dial that in. I would maybe take like an eighth of a teaspoon of that, because you turn these things over very quickly into estrogens, but I think the progesterone's going to be a really good thing for you. As I get all the data and figure out how to use this with men, I'll let you know.

Dave:

Okay. That makes great sense. There are questions coming in from the Upgrade collective about, would this replace hormone replacement therapy for women?

Christopher Shade:

Yeah. There's two ways to do it. I've had a number of, I had a lot of circum-50 year old women here. I've about a hundred, a little less than a hundred employees. Thank God, I'm a little less than a hundred for you know why.

Dave:

It's easy to have two companies. What you do is you just do a process of a cell mitosis and they have two companies that each have 50 employees.

Christopher Shade:

That is a good move. That's my manufacturing company and my sales company.

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Dave:

Shocking that it works.

Christopher Shade:

But right now I don't have to divide myself. I had a number of people on this for two years without any other hormone inputs, and they're postmenopausal and they love, love, love, love, love it. You can do that or you can use it as your DHEA source on top of doing some other bioidentical hormone replacement therapy, but then you probably only need about a quarter teaspoon. But the full teaspoon is a hundred milligrams of DHEA, and it fills everything up. There's a couple of different ways to use it, but we've seen it completely replace BHRT. We do have links, the one thing you talked about testing, we have a link on our site when it goes up to life extensions, hormone panels. Life extension has great hormone panels. There's a $75 panel where you can look at the big four, DHEA, estrogen, testosterone, and progesterone, and you can make sure you can do it before, you can take this stuff and you can monitor yourself every couple of months.

Dave:

That's the most important thing. I was going to say it, but you beat me to it. If you're working with a doctor and you're already on bioidentical hormone replacement, male or female, and you decide to do DHEA and various, especially this amazing DHEA formula that Chris has put together for Quicksilver, you'd want to know, what are your hormones now, and what do they look like after you've done it for a while to see if you need more or less? The good news is that if you are taking replacement hormones, which I've done since I was 26, because my hormones were so jacked up, what you end up doing is your body will self-regulate. That means if you take something that can convert into, say testosterone, then the body is unlikely to convert it into testosterone if you have enough of it. It's still though worth getting your numbers, so that you know if you're pushing things in the wrong direction, and it's not that expensive to do it anymore.

Christopher Shade:

No, it's not. What we've seen in over two years is that people go up to their level and they stay there for two years. You take them off, they go back down and they're like, "Oh wait, where did it all go?" You bring them up and they stay there, so it's nice and steady. But some women, they might have some influence that's driving them into making too much estrogen and they're going to want to look at that. If they have a really tricky system, then they're going to want to work with a doctor.

Now, the other use of all this is, when you just have adrenal fatigue. If you have burnout, you'll blow the whole system out, your DHEA goes down, everything goes down. You can use this to fill the system back up as long as you're not using it just as a crutch to just keep going at a million miles an hour. As long as you're addressing the sources of your burnout, you're doing your detox, you can use this to fill yourself up. In fact, I didn't realize how many people ... Dave and I are kind of the end of the metals era, the beginning of the plastics and molds era. I didn't realize how many young women were hormone dysregulated.

Dave:

Oh it's a huge problem, man. It's nuts, because of all this weird stuff. Like the weird diets and plastic and BPA, it's a soup out there.

Christopher Shade:

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Yeah. I just went to this event Joe DiStefano runs, Runga. I was expecting to talk to some of the 50-year-old women about this, but I had three women between 25 and 40-years-old that had stop cycling totally and everything was all messed up, and it was from exposures and stuff, and I was like, "Oh wow!" Put them on full detox protocols, but talked to them about using the hormones to support the system as they're getting everything out, because remember the hormones are necessary for all the detox reactions. Whether it's just adrenal burnout or some toxin overload that's blowing at your hormone system, you can use this when you're younger to support the hormone system while you're resetting, or all through that 30s to 50s just bringing it up a little higher with maybe an eighth of a dose, a quarter of a dose, or half of a dose, whatever you need to run at full Level.

Dave:

Beautiful. I love how you go into detail about how to dose this stuff because it's important. These things are way more powerful than what you're going to find if you go to the store and get some whatever stuff you would smear on. I would call them military-grade delivery systems. You can just drop a bomb somewhere or you can have a missile that says, "I'm going to go in and take out the building that I needed to take out." That's how you've always thought about it. I'm a huge fan of liposomes and micelles, all the different things that you work with in order to get it in. But you've done something else I want to make sure that I get to pick your brain about because you and I are both, we're going to live longer than we're supposed to kind of guys.

I've spoken about this, but not really since I wrote Super Human, my big anti-aging book about two years ago. I spent easily $10,000 on taking, I'll say, mega doses of something called cycloastrogenol and astragaloside. These are very expensive extracts of hundreds and hundreds of pounds of astragalus, and they're shown to lengthen telomeres. What you've done though for longevity is something that I'm really excited to be using. I want to know what I'm supposed to be feeling, but your Longevity Elite, you actually made nanoparticles of those things, so frankly, I never got any noticeable or quantifiable benefits from taking. It was at least a thousand dollars, actually it was more than 10 grand of those things, so at least a thousand dollars a month, and I did it for like two or three years. I didn't want to think about how much I spent on that. I want to know what results are you seeing and what results should I feel. I'm just starting to take it, but what Happens there?

Christopher Shade:

That's one that powers up the system big time. There's some pregnenolone in there. There's the fermented Korean ginseng, some hoshiwuji classic Chinese, and then those astragalosides, astragaloside 4 and cycloastragenol. When I started putting astragaloside 4, and I almost liked that one better from how it makes me feel into some nanoparticles. It was like an immediate fill-the-adrenal thing. I found that it works for regenerated kidney function, there's papers on all that. I believe that's because of its ability to upregulate klotho, KLOTHO. Klotho is this regenerative compound that you're making in your kidneys and your brain, and it affects kidney function, brain function, and cardiovascular function.

The astragaloside 4, I noticed, fixed my adrenal fatigue when I was traveling too much and I really like that and I love all those klotho things. Then the cycloastragenol has all the data around lengthening of telomere. We put those two in there and now we're going to set about, we haven't done a lot of testing around it, we did some of this serum klotho, but nobody knows where to measure klotho. It is in the white blood cells, the red blood cells, it's going to take a while till we know even what to measure. If I measure telomeres and administer cycloastragenol and measure them again, I'm violating a TA-65 patent. I'm a little bit trying to figure out how to test all this stuff out.

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Dave:

Having a patent on testing is actually something that just needs to be banned. You should be able to measure anything you want, but there's an algorithm to interpret the data that might be different. It's interesting. If you look back in Super Human, I had were pages on klotho. Jim Plante probably knows the most about that of anyone on the planet because he's trying to make klotho. He's a friend of mine who got me into it several years ago. It's one of the pre-eminent antiaging proteins that no one knows how to manipulate yet, but if you can show that you are raising klotho levels with Longevity Elite, that's legit.

Christopher Shade:

I would love to talk to Jim and say, should this be PDMCs, which are white blood cells? For readers out there or listeners, the reason you don't measure red blood cells is red blood cells aren't even freaking cells. They have no nucleus, they have no mitochondria, they're an oxygen transport system. Sometimes there's some things in there that are valid, sometimes there aren't. Then serum, often like NAD, NAD is not supposed to be in serum. It's not in there and so measuring it in serum is a totally different, like it's measuring something totally different. It's not measuring NAD levels. AMPK, there was, in this study about AMPK levels, then I asked the guy later, "Should we have done that in serum?" He goes, "Oh no, I don't think it means anything." I'm like, "Well, why did we do it?"

A lot of these things, they got to be biopsies and stuff, so I'd love to talk to Jim about where we measure it and then we can do the dosing and remeasure it. To finish up on the Longevity Elite, you should feel your energy go up, a lot of older guys feel libido go up. It's just a big, powering up of the system, adrenals. There was, one of the people that came into, a naturopath that works for me, he's a big one remedy guy and this woman came up after her father died. She dealt with all the funeral and all this, all came out of nowhere, she was a disaster just a shell, and he gave her one thing, Longevity Elite. Comes in 30 days later, she's a new woman. She calls, says "This stuff is liquid gold."

Because of that, you got the pregnenolone, the mother hormone, you got all the mitochondria. We don't realize that these really good adaptogens are mitochondrial enhancers. We got adrenal enhancing. We got the stress response, controlling cortisol. We were increasing hormone receptor density, and so there was so much in there that just boosted up the system and that's where the powering up comes in. It reminds me a lot of the old words about ginseng is that, it helps to ameliorate fear and stress by just making you more powerful in your skin.

Dave:

It is really cool, because I've always known your work and Quicksilver for really good delivery systems and primarily detox. If someone says, "I have a bunch of toxins," "All right, you should go talk to Chris, look at what they've got, and there's a bunch of just fantastic products for that." They'd go through the main pathways I talk about with my students. But what you've branched out into is hormone modulation for anti-aging with a new DHEA and a new progesterone. I think having a progesterone that's got the correct delivery system is really profound having a nano-serum versus just regular cream. I have progesterone cream in my drawer somewhere, but it probably doesn't work very well. But then this new thing around lengthening telomeres and upregulating klotho with a delivery system, that's never been used for those compounds, I'm pretty interested.

You've got a longevity and a hormone angle to what you're doing on top of detox, and I want to make sure people who listen for a while they know, I always say, "Look, you got to give us a discount because we're all learning all the time, we're also taking our biohacking dollars to live forever and stretching them. Quicksilverscientific.com/, code Dave15, and they'll give you 15% off almost everything, unless you're doctor level products. Thank you for offering that to listeners.

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I got to say the delivery mechanisms you talk about are hard to work with. You've been doing this for 10+ years and you've been able to achieve results over time. I've known you for since, that was probably about 2011 when we spoke at Autism One, and you've just continuously evolved this ability to laser target which supplements in what shape and what form to what receptors, and I think it's bearing real fruit. I'm going to be doing the Longevity Elite. I'm going to play around with your progesterone products. I might even try some of the DHEA product, but like you said, an eighth of the normal dose, because I love to get my DHEA up without having negative effects that Lana doesn't like. She's going to kill me for that comment.

Christopher Shade:

No, yeah, do that, it'll all be great. The thing that we're doing for men, but it's going to go through compounding pharmacies, is testosterone nanoparticle sublingual. This is a totally different approach to testosterone. Say your native testosterone is 300, you want to be riding higher. You take a dose of this, say, 12 milligrams. You'll go up to 2000 and over the next four hours come back to your baseline. That one shot on the androgens receptors is enough because the androgen receptors are stimulating all these downstream activity, which is really the androgenic activity. That one shot on the receptors is enough to carry you through. Maybe we'll end up doing it twice a day, but the beauty here is that when we're on, say, injectable, like when we're on testosterone cypionate, we're keeping this high level of testosterone all the time.

It goes up, it comes down, a little injecting and it goes up. What it does is it shuts off your testicular secretion, but it shuts off all your testicular function. It shuts down FSH and LH, and then what you get is testicular atrophy. They get smaller, ejaculate gets smaller, you're not making firm. Actually, injectable test is a contraceptive and it stops all these other things that your testicles do. We had tested this out a couple of years ago and people felt great on it, women really loved it, and so we're going to start doing this with college pharmacy. We have a bunch of people who we're starting the first testing with now, and by Q1 next year, we hope to have this thing out. Then once a day, you have this big peak of test and what we're hoping to see is the FSH and the LH stay up, testicular volume stays there, ejaculate volume stays there, quality stays there, yet you have that androgenicity that you're looking for.

Dave:

This may end up being a replacement for SARMs. If you are a long-time listener to the show of, geez, 3, 4 years ago, I've put on 29 pounds in six weeks without changing my diet or exercise just by using things that modulate testosterone receptors that don't turn into androgens. That isn't necessarily a good idea because then you develop enough muscle to pull your tendons and ligaments apart, because those don't grow like muscles do. Oops, a little bit of a problem with biohacking there, but I did have to buy new shirts when I did that. This is probably a much more adult approach, and I will say with full disclosure here, I've talked about my stretch marks, I started taking testosterone when I was 26, because my testosterone levels were lower than my mother's, literally, quantifiably so, because I had such wrecked biology. I was obese, all that extra white fat makes more estrogen. I was overaromatizing, my thyroid was off, I had a really bad start to all this biohacking.

Working with the doctor, I went on bioidentical testosterone, kept my levels right where they should be, not crazy high, and it's made a big difference. I can go off of it and my levels just aren't where I want them, if I'm very perfect, I can get them to a middle of the range, but not mid-high. I still take testosterone, and one side effect of being on testosterone for 20+ years is smaller balls. For some people, it's a cosmetic issue. It doesn't appear to have any physiological effects that matter other than your underwear fit better, probably. But I have spoken to probably 20 anti-aging doctors about this and

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it's, some guys get it and there's ways to fix it. If I want to take clomid I want to take Arimidex, which are prescription drugs with side effects that block those things that the doses you have to take. I did do that for years and I'm like, "I just don't care." Yes, guys. I have smaller balls than you, but that's all right. I still do what I want to do.

Christopher Shade:

Yeah. You have to go off of it. You can speed it up with HCG and they come back. I've done that, but it's like, "How can I get both?"

Dave:

Well, exactly. I would rather say, "Look, you get a few occasional spikes in testosterone," and to be really clear, whether you're a man or a woman, if you're low T you're low desire. I don't mean sexual desire, I mean desire to do something that matters. It's a neurochemical as much as it's [crosstalk 01:11:36].

Christopher Shade:

You're low concentration. You look at women in peri-menopause and menopause, they're like, "Ah, what? What'd you just say? I don't know." The multitasking is gone, the focus is gone, the drive to do things is gone, same for men. Testosterone is just wonderful that way and all the old stuff about cardiovascular, it's cardioprotective. All this stuff about prostate cancer, no, it doesn't do that. None of that stuff happens, that was all disproven. Having the right levels of all the hormones just powers everything up.

Dave:

Yup. People are asking in the Upgrade collective right now. "Okay, I want to use the Dave15 code. If I can only buy one thing, what should it be?" What I've just typed and answer, "Like, which problem do you want to hack?" If it's an energy problem, probably the DHEA. If it's, you know it's a toxin problem, you go for one of your detox things. If it's a calmness problem, you go with progesterone. Then, if it's an aging thing they're looking for and goes like, "I want to do the aging thing," that's Longevity Elite. Do I have that set of recommendations right? Because that's what I just typed.

Christopher Shade:

In the detox, PushCatch liver detox, it comes as a pair there, the liver sauce and the binder. Wonderful. Each box will last about two weeks. You do 10 days on, 4 days off. I'd go in for a month. Do two, think about double doses, the second half do three boxes. Then, in the hormone side, energy for, really just get both on the hormone side, and they'll be a bundle where they come together. Then, the longevity side, it's Longevity Elite, then the NAD precursors, nicotinamide mononucleotide, and the liposome, NAD gold and NAD platinum. NAD gold is just the straight NNN. NAD platinum is the NMN with methylation factors. That's the one thing that we missed in the NAD thing in the beginning, is you have to balance building NAD with building methylation, because when you build NAD as you're activating sirtuins you're building up a pool of nicotinamide.

To get rid of that excess, because it actually blocks the sirtuins then, to get rid of the excess, you use Sam-E to methylate and you build homocystine. If you're trying NAD precursors, but you're not getting the clarity and the strength you want, you need more methylation. We have NAD gold and the methyl charge that go together, or they're blended together in the NAD platinum to make them a little bit simpler.

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Dave:

I think that you've got a great stack there, and thank you for sharing the info about detox and aging, because even in the anti-aging movement, some of the guys, I really just love and respect who are doing core work in the labs. Detox isn't usually on the radar. It's, how do I go in and make the cell do what I want? I'm like, stop putting bad stuff in there versus adding some of this and some of that. We could go for hours and hours, but I want to make sure we have the right link to show for iTunes and everywhere else.

Chris, quicksilver scientific.com/, code Dave15 saves people a bunch of money. Guys, I hope that rundown works for you. There's detox that's there. There's a longevity thing and then there's DHEA, which is more energy and female hormones and progesterone, which is more sleep relaxation. I'm actually using all of those. Actually, I haven't tried the progesterone yet, and I haven't tried the female hormones, because I'm not a female, but I'm going to take a little tiny dash of that to see if I could tweak my DHEA levels, and you're going to come out with the men's version of that soon.

Guys, there you go. There's your how-to-understand what we just said and do these things and see if you feel radically different. If you do, it's worth not going to the coffee shop every single day in order to cover it. People say supplements are expensive. They are, but so is a lot of the other stuff that you do and there is nothing more precious in my life than feeling good and having a brain that works and having more energy than I need all the time because I did not have that for a lot of my life.

I'll tell you, I have, at times, spent 20% of my monthly income on supplements, because it made me feel so good, and it was the best I ever did. I don't think you should have to do that, no one should ever be as sick as I was, but I will tell you if you buy supplements, you want ones that work really, really well. Chris has built a great reputation over the last decade building laser-targeted stuff that you don't see somewhere else. Chris, thanks, man, I appreciate you.

Christopher Shade:

Absolutely. Thanks so much. It really is stuff that works. You're going to pay more, you might pay twice as much, but Kristen, 25-fold increase in bioavailability. CBD, 6-fold, curcumins are hundreds of fold, and so you're going to get more in. The DHEA, we're still trying to quantify it, it's 10 to 20-fold higher. That's where the changes happen, is when you get Pow. You get a nice pop of these things into the blood and that's where everything happens, so don't be afraid to pay for it. It's been a pleasure talking to you, Dave. I love talking about all these subjects and thank you very much.

Dave:

If you like the episode today, you know what to do. Leave a review, it's one of the best things you can possibly do. If you want to be part of the studio audience, the guys who are asking questions and being able to check in and hear this as I was recording it, including the parts that didn't make it into the final edit, go to ourupgradecollective.com and sign up to be a part of my mentorship and membership group. I will teach you every single one of my books and structured courses that don't take very much time, so you learn that way. There's a vibrant community with coaches who help you hack yourself, and of course, we all like Quicksilver products. See you on the next episode.

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