Why You Can't Live Without Minerals – BEAM Minerals with Dave Asprey – #813

Announcer:

Bulletproof Radio, a state of high performance.

Dave Asprey:

You're listening to Bulletproof Radio with Dave Asprey. Today, we're going to talk about minerals, and some foundational questions about why they matter in your biology, and why you probably would do a lot better as a biohacker, or just as a human being who wants to be hard to kill if you pay way more attention to them. You have about 30 trillion cells in your body, every one of them uses minerals. The reason the body uses minerals... There are some basic chemistry things that we do, but in biochemistry, minerals are oftentimes part of enzymes. And what enzymes do, is enzymes allow the body to do chemical reactions with far, far less energy than would normally be required. In fact, without enzymes, we wouldn't be alive.

So, they're building blocks, but they're also basically factors in enzymes. And if you're missing some minerals, then you don't make enzymes well, and then your body does its best with what it's got. And our guest today is Caroline Alan, who's the co-founder of BEAM Minerals. And she's going to talk about what happens with minerals, how she used minerals for her own biology. And we're going to go really deep into research on how they work in human physiology, especially minerals that come from ancient plants, something called fulvic and humic mineral complexes, something that... If you're 70 or 80 years old, you might've heard of these, because we talked about these a lot when the research was hot in the '60s, '70s, and '80s, and then we kind of moved on, but these work differently than other minerals, and I've been reviewing the literature, and I'm blown away.

And what I've been doing for the past two years now, thereabouts, is I actually put it in my coffee in the morning, because you can't taste it, and all of a sudden, I'm getting the benefits that you're going to hear about on the show today. So, this is something that is affordable and something that I think has a system-wide effect on human biology, and something that's really worth your attention, which is why we're doing a show based on it. So, I'm happy you guys are all here to listen in the live audience, both Clubhouse and Upgrade Collective, and, Caroline, welcome to the show.

Caroline Alan:

Thank you. Thank you so much for having me, Dave.

Dave:

It is my pleasure. Now, you were kind of like me, corporate career, software development, business consulting, boring life... Okay, it's not that boring, but-

Caroline:

It gets old.

Dave:

It does get old. And it did something bad to you as far as I can tell, you got inflammation everywhere. Kind of tell me your story and what minerals did for you, because it's important that people connect with that like, this is a real thing. So, what happened to you?

Caroline:

Yeah. Well, I think there's a couple of things, I think life happened to me, meaning, even without all of the stress of a corporate career, this happens to everybody as we grow older. But what specifically happened to me is that I ended up with a body that had inflammation throughout, I had major gut inflammation, I had major mouth inflammation, I had hemorrhoids, I had headaches almost every day. I had had a lifelong gluten intolerance that I was unaware of, but that certainly added to the inflammation in my gut, and I learned about that.

But even with taking gluten out of my diet, I still continued to have this systemic inflammation. I had flat-lined adrenals and I had very low thyroid. So, I was in a bad way. And I had worked with Natural Paths and all sorts of different people trying to find out what was wrong with me, and get better. And then, my friend, Dan Howard, introduced me to fulvic and humic minerals, this beautiful simple drink.

Dave:

How much did you spend trying to get better? Like brass tacks, how many hundreds [crosstalk 00:04:07]?

Caroline:

How much money?

Dave:

Yeah.

Caroline:

Oh, I probably spent $75,000. [crosstalk 00:04:18].

Dave:

My number was 300,000, and I spent another [inaudible 00:04:21] since then on upgrades, but that's different. It's that big of a deal, and you're not alone.

Caroline:

It is.

Dave:

There are many people who spend all of the money they have because they're wrecked, and then they're like, "I don't know what to do." That's what motivates me to write my blog and to do this podcast, I'm like, "I don't want that to happen to anyone else." I'm lucky that I had a job where I could afford to get well, but how much money of that 75 that you spent did you need to spend knowing what you know now?

Caroline:

Very little. I really think very little. And that is because after getting well... And that's a little bit of a story. But after taking these minerals, which allowed my body to naturally come back to homeostasis, naturally do the healing work that it does when it's well supported at a cellular level... I mean, it was like magic. I mean, one of the quick stories that's really great is that, I had really bad inflammation in my

mouth, these deep pockets. I went to my dentist, I remember I cried at my dentist multiple times, because I was trying to figure out what was wrong with me. And I started taking these minerals, and I'd taken them for about two and a half months, and I went in to get my teeth cleaned... And I used to have to have novocaine to get my teeth cleaned, because it was so painful.

And I went in, and I had my teeth cleaned, and it was pretty easy. I actually didn't use any of the pain medication. And then, my dentist came in and she looked in my mouth and immediately she said, "Oh my God, what is happening? What are you doing? The pH in your mouth is totally different, the tissue is changing, what are you doing?" And I kind of thought about it, I didn't really think of anything, I was like, "I don't know." But what I realized after she went out and then came back, was that I had been taking these minerals, so yeah.

Dave:

There's something interesting-

Caroline:

And that was repeated with my natural path and with all sorts of things over a period, and over a period of three years, my health is just... My adrenals are almost back to normal, all sorts of things.

Dave:

One of the things that happens as you start to get inflammation over time is you see it in the gums. And there's two ducts underneath the tongue that release extra minerals or imbalanced minerals. And if you're eating a lot of oxalates or you're eating too much calcium, it actually makes a lot of tartar on the back of your lower teeth. And if you eat raw spinach, salads every day, or kale every day for a week, you'll actually feel like a graininess on the back of your teeth, and that's the body trying to dump all this extra stuff. And it's one of the reasons that gum health is an early indicator. There's also bacterial stuff. We just did an episode about changing the oral biome in your mouth.

But I experienced the same thing, I had to get my teeth cleaned four times a year, because of this harder buildup that was from mineral imbalances. And those can come from environmental signals messing with things, they can come from not having enough minerals, have too much of one versus the other. And the big thing that I learned, and the reason I wanted to have you on the show to talk about this is that, you can have too much minerals outside the cells and no minerals inside the cells. And you have too much in the cells of one and none outside, or too much outside.

Caroline:

Exactly.

Dave:

So, there's red blood cell and other tissue minerals, some of which is hard to measure, and then there's minerals floating around, they can't get in. And it turns out, the thing about getting them in the cells is what form was the delivery system. And the most evidence I've been able to find... I mean, I went really deep on the science for this episode, I probably read 20 papers on-

Caroline:

It's so exciting.

Dave:

Most of them are from '80s and '90s on humic and fulvic. And what it turns out is, it's the size, the minerals that are in them, and whether they can actually get in. And there's interesting stuff around the electrical stuff on the membrane of the cell with these forms of minerals. I'm pretty darn convinced that it's not one pathway, there's probably eight that I've been able to identify about how they're getting in. And you guys have heard me talk about liposomes, there's actually tiny micelles which are like liposomes, which are these little fat-soluble things. So, this is part of it. So, you can't lick a bumper hitch and say, "[inaudible 00:08:48] I got my iron." And that seems obvious, right? But that's actually how it works.

Caroline:

Exactly.

Dave:

So, you got to say, "All right, what's the form? And then, you can have complex mineral forms, like the chelates and the orotate, which is one of my favorite forms, or some of the minerals. But mineral salts go in a different way than these basically nanoparticles and ionic particles, and I think it's worth doing both. And this is my first question for you, do we need mineral salts? Or, are you like, "Oh, just take your humic and fulvic and you're good to go?"

Caroline:

To talk about it, I feel like we have to kind of go down the rabbit hole a bit, okay? So, I feel like the humic and fulvic... I'm not saying you don't need salts, of course you need salts, but I personally, from my experience and my research around cell salts, if I had a choice between taking cell salts and... We haven't even talked about what the difference is, and humic and fulvic complexes, not acids or colloids, I would definitely go with the humic and fulvic, and we can go into why that is.

Dave:

Wow, okay.

Caroline:

I think it's because... So, first of all, the most exciting thing, I think, about it is, these humic and fulvic complexes, they're like mother nature's answer to mineral supplementation. All plants and animals across the earth already use these, that's what your body already uses. But you just have very low levels of them because of production farm foods, and all of those... That's one of your bandwagons, I know.

Dave:

Let me paint a picture, and I want you to tell me where my picture is wrong, okay?

Caroline:

Okay.

Dave:

If you were to say, "All right, I'm a good person, I'm going to eat my vegetables..." Okay? And let's assume that you're Bulletproof, so you know which vegetables are actually going to punch you in the face when you eat them, so maybe you should eat less of those.

Caroline:

Right.

Dave:

Right? But you're going to do a kale free juice and all that stuff. There's a certain amount of these minerals in those vegetables, but there's only so much. So, imagine if you took tons of these things, and you compressed them over time, and you got rid of most of the organic compounds. And what you had left was an incredibly concentrated set of minerals from plants, and then you made tea out of that.

Caroline:

Yes.

Dave:

It's like way beyond what you could get from juicing, where you're throwing out all the-

Caroline:

Exactly.

Dave:

... extra bulk stuff, but you're getting so much more. How many pounds of vegetable matter? These are old dinosaur vegetables basically. But how many pounds of those does it take to make a pound of fulvic and humic minerals? I believe it's like tons of ancient vegetable matter that gets compressed [crosstalk 00:11:44].

Caroline:

Yes.

Dave:

Do you have a number?

Caroline:

Yes. And honestly, I don't have a number for that, but I believe it is hundreds of pounds of raw plant material that is broken down and decomposed. It's kind of an interesting story, I don't know if you want to go into how the humic and fulvic are actually created.

Dave:

Yeah, talk about how they're formed, because [crosstalk 00:12:04].

Caroline:

It's really interesting. So, if you think about a tablespoon of dirt, it's got a really healthy dirt, it's got 100 or 10 billion microbes just in a tablespoon, okay? Now, of course, our soils that we're production farming in, most of those microbes have been killed from pesticides, so that's a problem. But anyway, you have these 10 billion microbes, and it takes a very specific set of species of microbes that go through a sequential process. So, one microbe eats or digests some of the plant material, and it excretes a substance. And then, it takes another species of microbe that comes and eats or digests that excretion. Then another microbe comes and eats that microbe. And this goes on in a form like this, and ultimately, you have a microbe that's excreting something called humin, okay? So, it's gone through this-

Dave:

H-U-M-I-N.

Caroline:

H-U-M-I-N. Which is different than the ancient plant matter, which is called humate. So, the humin is what you see in the forest when you see things are decomposing. Or you look in a pond and you see brown water, that's humin, that's this decomposition process happening. Okay. But the humate is the crystalline substance that's created out of that hundreds of pounds of raw plant material that's gone through this microbial decomposition process, ultimately ending up in humin, and then slowly over a million years, getting compressed down into this crystalline substance. So, it's kind of like you get all of the best parts of the plants without any of those anti-nutrients, or any of those things, because it's been broken down into its chemical or mineral components directly available to the body.

Dave:

So, it's the most concentrated form of minerals that you could get, and you couldn't eat that many plants.

Caroline:

Exactly.

Dave:

Now, a lot of people listening on Upgrade Collective, or just listening wherever they're listening to this when it gets published, or in Clubhouse, they've probably heard of Shilajit.

Caroline:

Yes, Shilajit.

Dave:

Shilajit. What is the difference between the BEAM Minerals version of humic and fulvic mineral complexes and Shilajit? Because there's interesting studies, and there's a lot of overlap.

Caroline:

Yeah. They're actually the same substance, one is from the Himalayas and one is from other locations, as an example, where we get ours. If you're going to try and eat... Have you ever tried to eat it, Shilajit?

Dave:

I don't like Shilajit. In fact, I've never noticed any difference from trying it.

Caroline:

Oh, my God.

Dave:

I don't think Shilajit works that well. I know people who swear by it, but it's basically kind of scum that comes out of rocks.

Caroline:

Exactly.

Dave:

Which doesn't mean it's a bad thing, but the studies that I found showed that the composition of minerals vary greatly depending on where you get it.

Caroline:

Yes, exactly.

Dave:

And that the size of the molecule, something called a dalton, a very, very fine unit of measure... I know about daltons because... There's a reason that Bulletproof Collagen doesn't taste like shoes, it's because I got the daltons right. And it was a lot of work in the early days of making collagen a thing, in order to get that right.

Caroline:

Now, that's been amazing. Mm-hmm (affirmative).

Dave:

I understand there's a difference in particle size, and difference in composition of minerals, based on where you get it, how do you know that you're getting the good stuff at BEAM Minerals versus something else? Do you have studies? Or what's your take on where you get yours?

Caroline:

Well, of course, we think that ours comes from a very, very incredibly rich deposit. One of the ways that you can tell that is in the full spectrum aspect of it, when you do the certificate of analysis level testing, and you determine what levels of minerals exist in this particular material. It's off the charts much more concentrated. Then, as an example, ours don't come from the Great Salt Lake. So, nothing against those minerals, again, I think mineral supplementation of any kind is better than none, but they're just not very full spectrum comparatively to the humic and fulvic.

Dave:

When you say full spectrum, people wouldn't really know this unless you're really a nerd, but there's probably a need for iridium in your body.

Caroline:

Yes.

Dave:

It's just excessively small, right?

Caroline:

Yes.

Dave:

And there's these not very famous minerals that are out there, and you want a little bit of those. And having what you're calling full spectrum there, I think there's valid scientific evidence, but there are superstar ones like zinc and copper and magnesium and whatever else. You're not going to get enough magnesium from these complexes, I don't believe, because you need a gram or so. So, you're going to get magnesium in salt form, and you'll get calcium and sodium and potassium. So, we're not talking about those minerals as much as we're talking about the... We'll call them micro minerals, for lack of a better word, but the ones you need just a little bit of.

Caroline:

Well, the only thing that I would like to throw into the mix here is that, though you may not get the large amounts of magnesium or potassium that you may need, the cool thing about ionic minerals is that when they are assimilated, they actually stay in solution much longer... And this is a whole thing we could talk about. So, they actually build up over time. So, over time, my system has become more re-mineralized, and so it's easier for my body to maintain or gain homeostasis, because the minerals are available.

The way I like to describe is kind of a cool description that I ran across. And if you think about the gut as like a hose, and on the inside of that hose, are all these ionic receptors. So, an ionic mineral, just for people who don't know what that is, is a mineral like... If you have zinc and... Zinc gluconate is an ionic mineral, the zinc is bound with the gluconate, okay? And on the inside of your gut are a myriad of receptors for all sorts of things like iridium. There are very few, but there are receptors for iridium. There are receptors for phosphorus. There are receptors for these different things.

So, when we're talking about how to get minerals into our body, we have to think about, first, absorption. And this is the absorption process. So, you drink, or let's say you take a pill of magnesium, and this mega dose format, and now you've got magnesium flooding through your gut... But you only have so many receptors, so you will really only end up getting about 10 or 12% of that. First of all, your body... Because it's a pill or powder, you have to digest it first, and that takes a period of time. And then also, there's only so many receptors. So, most of it washes through, and you only end up getting [crosstalk 00:20:09].

Dave:

Absorption matters. It's kind of like food, a lot of people don't know this, you eat a steak, you might spend 30% of the calories in the steak absorbing the steak.

Caroline:

Yes.

Dave:

But if you eat corn syrup, you eat 100% percent of the corn syrup, because it doesn't require any digestion. And this is why that calorie counting stuff is nonsense, it's how much of it can the body use?

Caroline:

Yes.

Dave:

Which is important.

Caroline:

I like that statement where people say... We used to say, "We are what we eat," but actually, we're what we assimilate.

Dave:

There you go. I just posted on Instagram. A gram of uranium has 20 billion calories in it, so therefore, you'll get fat if you eat a gram of... It'll give you 5,000 pounds [crosstalk 00:20:50]. It's just math, it's [crosstalk 00:20:51], it's Newton's law. I'm like, "Come on guys."

Caroline:

[crosstalk 00:20:55].

Dave:

That's clearly absurd, but the idea is okay. And also magnesium, if you take too much magnesium for your receptors, you get disaster pants. This is how you know if you've gone too much, it gives you the runs, because the body is like, "I got to shit this."

Caroline:

Exactly.

Dave:

So, there's a use for the salts, right?

Caroline:

Mm-hmm (affirmative).

Dave:

But then, what do you get into the cells for enzyme activities? And I don't know, and maybe you do, what percentage of a salt mineral is going to enter the cell, do we have good data on that? Or does it depend on what kind of salt it is?

Caroline:

Well, again, it does, it depends on the delivery format. So, again, it has to do... And so, this is why... I'm trying to get to this piece, which is about... So, we talked about absorption, now let's talk about

assimilation. So, absorption is getting those minerals into the bloodstream, and then assimilation is getting those into the cell, at least the ones that need to get into the cell. Okay?

Dave:

Right.

Caroline:

So, that's where this fulvic complex is a killer thing. I mean, it's just amazing. Because the fulvic complex is a flavonoid, and what it does is it carries 60 times its weight up to... 60 times its molecular weight of nutrients into the cell. Then, it can carry up to 60 times its weight of toxins and bio waste out of the cell. So, think about all that inflammation in my body that was stored in the cells, and because I didn't have much of this transportation capacity, literally, my system was toxified, and having a really hard time getting rid of these toxins, and et cetera.

Dave:

Even after reading all the papers on these... I understand there's some stuff we're going to talk about with inflammation. I think there's six papers on inflammation reduction from these complexes on par with taking cortisol levels.

Caroline:

Mm-hmm (affirmative) Yes.

Dave:

And cortisol is profoundly [inaudible 00:22:59]... Or prednisone, at least, in the study that I found. But even before we get there, I don't understand how fulvic and humic minerals cause toxins to leave cells. I know they do it, but I don't understand how. How does it work?

Caroline:

Oh, great. Okay. So, think of it this way. So, there are lots of ways actually that things come in and go out of the cells, okay? One of them, kind of the basic way is passive diffusion, and that is related to what's called a concentration gradient. So, if you have two bodies of water that are attached together through a channel, and one has more salt than the other, over time, they will naturally try to create a concentration gradient of that salt. And that's what's happening in your cells and outside your cells all the time, is this passive diffusion. The next type is called the cotransport... Excuse me, active diffusion is the next one.

So, active diffusion requires a flavonoid, like the fulvic complex, something that actually can carry or open a channel, and carry something into the cell, or out of the cell still using that diffusion process. The third way is this cotransport, and that's what the fulvic does. Because fulvic minerals, these complexes are one of the most highly charged molecules known to man. They're amazing that way. So, they attract the minerals, et cetera, the nutrients, and carry them 60 times their weight in using this standard passive... Once the channel is open, the passive diffusion process occurs.

Now, what's even more cool is that the humic complexes have this ability. It's a chemical process, it interacts with the cell at an atomic level, and it opens more channels in the cell wall. They say that, from their studies, the humic complexes increase cell wall permeability. So, that's why these humic and fulvic things are so incredible.

And one of the things that they're studying worldwide is that the humic and fulvic, they occur together everywhere in nature, and they have this somewhat symbiotic relationship. And as soon as you start studying it, you actually end up in quantum mechanics... And I know nothing about that. That's probably the [inaudible 00:26:01] where I went, "Okay, I don't know if I can study this." But the fulvic complex actually has an ability to change its electrical charge. One of the reasons [inaudible 00:26:17] that occurs is because the humic complex only stays in solution in a certain pH range, and the fulvic-

Dave:

So, you got to say, somewhat alkaline for this work, right?

Caroline:

Exactly. And the fulvic complex actually changes its electrical polarity to adjust the pH in the area, to keep that... They don't know exactly why it does it, but they noticed that it keeps the pH at a certain level.

Dave:

Thank you for saying, "In the area." So, there's a lot of very annoying... "Oh, you have to drink alkaline water or you're a bad person." I fell for that in the late '90s, and I'm just going to say it's BS.

Caroline:

Yeah. All that.

Dave:

Because a battery has positive and negative, and it doesn't work without that, and you have the equivalent of batteries in your biology. So, sometimes you need alkaline here, and you need acid here, and it's the difference between the two that makes electrons, it's kind of important.

Caroline:

Exactly.

Dave:

So, the quality of your water matters greatly, the structure of your water matters greatly, but if you're worried about alkalinity, baking soda kicks ass over alkaline water, and it's a lot easier to make. And you can-

Caroline:

Exactly.

Dave:

... do potassium bicarbonate and all these other things. But what you're saying is, this stuff gets into the cell and it changes its polarity. So, it's tuning inside or at the border of the cell, it's tuning the alkalinity so that you get better flow of gunk out of the cells, so you can do the cellular cleanup.

Caroline:

Exactly, exactly.

Dave:

Now, people-

Caroline:

And then, the cool thing... Oh, go on.

Dave:

Now, people in the Upgrade Collective, people who've read my books understand one of the seven pillars of aging is buildup of gunk inside and outside the cells. So, I believe these minerals... And based on a lot of studies, in fact I'm doing a big science piece for you guys on daveasprey.com as well going into the science here, but I believe that this is letting you get more of the gunk out of the cells, which is one of the seven big things you'd maintain. And I've written a lot about toxic metals and things, so people see reductions in mercury and reductions in nickel and lead, and things like that, because probably they're opening up their cells.

Caroline:

Exactly. And the cool thing is... So, using these fulvic complexes, who've gotten that gunk out of your cells, finally, your cells... I kind of say like, your cells are having a party because they're so happy to be getting rid of all this junk, that it actually affects the nervous system. At least my experience in talking with many people is, it actually affects the nervous system over time, because the nervous system kind of starts to relax a bit instead of kind of being on edge. But once that gunk gets out of the cells, now you want to get it out of the body, and this is the beauty of the humic complex. So, we talked about this fulvic complex is very, very small, much, much, much smaller than a cell, but the humic complex is actually a very large molecule, it hangs out in the bloodstream, and it's super charged, and it's a chelator.

The way I like to describe it, I think it's a really good visual is, think about [inaudible 00:29:31]. And it basically travels through the bloodstream picking up heavy metals, binding with free radicals, picking up bio waste and toxins. And then, at a certain point, it gets so heavy, kind of in a molecular weight level, that it falls out of solution, and it leaves the body through the normal channels. It's like nature's janitor, is the way I think of it.

Dave:

A lot of longtime listeners or people who have read my books know about activated charcoal, and I've been just beating that drum for 10 plus years. And what activated charcoal does, it also has a very strong negative charge and it'll attract toxins, but it doesn't enter the blood, it stays in the gut. And if you could have something that has an equivalent effect that actually does it in the blood, cleaning the blood is kind of important for anti-aging. In fact, you guys have seen me on video getting my blood taken out in basically dialysis, and washing through special filters to remove crap from the plasma, and then putting the clean ozonated plasma back in, because that actually does make you younger. But having a little mop-up operations every day seems like a really good anti-aging strategy.

Caroline:

And then, think about using the humic with the charcoal, what a great team, right?

Dave:

Oh, totally. And you can't take them together. Actually, can you take them at exactly the same time? Will the charcoal bind... They're both negatively charged, they shouldn't stick to each other, right?

Caroline:

I don't see any reason you couldn't take them together.

Dave:

Yeah, they're compatible.

Caroline:

I certainly do.

Dave:

From a biochemistry perspective, I think it's okay.

Caroline:

Mm-hmm (affirmative) Yeah.

Dave:

Some of the things that are happening in the world right now, there's people who are getting long COVID, we have massive problems with auto-immune issues, with allergies, all of those are tied to mass cell activation. This is the mechanism of inflammation and one that... If you've ever taken an anti-allergy pill, or you've swollen up after a mosquito bite, whatever, it's all about mass cell degranulation. And what happens is, when you take Benadryl or something like that, you're blocking histamine, but what the studies are showing about humic and fulvic, the stuff that you're talking about this whole episode, the stuff that BEAM Minerals is based on, is that in studies, that it reduces TNF alpha, which is a major inflammatory marker in the body, or signal in the body.

And what happens in the gut... And I wrote about this in the fasting book, if you fast, the gut bacteria get annoyed, because like, "I don't have any food." So then, they make something called lipopolysaccharide. And lipopolysaccharide is something that causes systemic inflammation, it causes brain fog, it causes cravings. So, bad gut bacteria will do that, stress gut bacteria will do that. And they used it in animal models to cause inflammation. This is what Wim Hof was basically taking when he was doing his breathing to show that he could actually consciously control his immune system.

Well, it turns out that in a study, they were adding fulvic to people, reduced the TNF alpha that came out as a response to lipopolysaccharides. So, they're in introducing this nasty chemical that all of us have being made on board every day, and this stuff blocked it. And it reduced COX-2, which is what those non-steroidal anti-inflammatory drugs like aspirin and Aleve, and stuff like that... I think aspirin is COX-2, I don't remember. But anyway, that's what those things do. And they're saying, "That's interesting." And the studies go on and on-

Caroline:

Exactly.

Dave:

... [inaudible 00:33:05] something called IL-4, IL-13. So, what this shows is... Not just from one study, but many studies, gee, these have an anti-allergy effect. And if you're worried about your immune system going bonkers-

Caroline:

[crosstalk 00:33:18].

Dave:

... after you get any infection, bacterial or viral, even the real popular trendy viral ones... Notice how I avoided saying anything there that would get noted by any sort of automated systems listening there.

Caroline:

Yes. Yes. Thank you.

Dave:

But I think it's a good idea to have this stuff present on a regular basis, because you don't want overactive inflammatory in mast cells in the body, and it's an epidemic happening right now.

Caroline:

Mm-hmm (affirmative). It's one of the things that changed in my body, is I used to be so allergic in the spring to pollens and grasses, et cetera, I don't have any of that anymore.

Dave:

Just how much do you drink every day, and how often? Because I still [inaudible 00:33:54].

Caroline:

Well you know what? It depends on the day.

Dave:

I'm getting all the pollen like no one's business right now.

Caroline:

I mean, I have an endless supply, of course, but-

Dave:

I mean, do you drink a gallon a day, or [inaudible 00:34:00]?

Caroline:

No, no, no, no. I drink about an ounce of the fulvic and an ounce of our humic-fulvic product, our Micro-BOOST a day, so two ounces. But there's days where I wake up and I just feel loggie, and who knows what it was, or maybe in an afternoon I might feel loggie, I'll... I actually love our sprays, they're really great for a really quick pick me up, just spray it, breathe it in three or four times, and go on with my day.

Dave:

So, the spray you're talking about, I had not experienced [inaudible 00:34:42], I've been aware of Shilajit and I've been aware of just the idea of this, but I hadn't had a properly formulated one, so I started drinking the BEAM Minerals. But you sent me the spray, and I'm like, "Do I really..." I hate magnesium oil, that stuff is dumb.

Caroline:

Oh, yeah, [crosstalk 00:35:00].

Dave:

Some people really need it. This is a really slimy magnesium, and you put in your skin, that's supposed to be good for you. It's not worth it. It makes you itch and it's gross, and it feels like you have lube on you all the time.

Caroline:

I hate it.

Dave:

No. But this stuff doesn't do that at all, it just goes away, and so I'm like, "All right, what's the deal?" But you mist it, and you actually breathe in. And what did I just say about allergies and direct cellular effects in multiple studies? Maybe it's a good idea to do that. So, I'll mist my face with it. I have one behind me, behind the things that [inaudible 00:35:29] my counter of crazy biohacking stuff, but I have it back there. So, I'll do that a couple of times a day. And then, I don't think I'm using enough, I probably use a tablespoon, but not an ounce, and I just put it in my first cup of coffee in the morning. Do I need to spread it out throughout the day?

Caroline:

[crosstalk 00:35:44]. No, you don't. You don't. I mean, again, if you're thinking about your system in this, you're providing those, as soon as you drink our minerals, because they're ionic, which again, we could talk a little bit about what that means, but they immediately enter your circulation and become available, which is... It's just very, very cool. And again, they stay available for a long time. So, everybody's different about when they want to take it, I personally don't think that it makes any difference.

The thing I want to say about the spray that is so cool is, again, if you think about that fulvic complex and how small it is, it totally makes sense that it's going to work by spraying it on, because it's immediately absorbing at a cellular level into your body, especially through your nasal membranes, which are very permeable. I have people who use it for headaches, actually, that it works very well for headaches. Everyone's different-

Dave:

Wow, [crosstalk 00:37:01].

Caroline:

Yeah. Yeah. Maybe not. They'll spray it, they'll breathe it on, and then 15 minutes later, they'll go, "Wow, my headache is so much better." So, you probably don't get headaches, right?

Dave:

Not very often. Put me under bright LED lights all day, and I'll probably get one, but that's just from my brain being punched in the face by junk light.

Caroline:

Right.

Dave:

Otherwise, I'm pretty headache proof these days. I've gone through periods when they were a big issue. Are you talking about migraine headaches, or just any kind of headache?

Caroline:

I've not heard of people using the spray for migraines, but I do have a couple of people who, after taking the mineral, stopped having migraines. I had one guy who got a migraine every three days practically, and he doesn't get migraines anymore. So, again, the thing I most want people to understand is that, if you think about your cellular system, which everything in your body is made of cells, and if you think about providing every single one of those 37 to 100 trillion cells in your body... They used to say 37 and now they got stronger microscopes, so now they say, "Or maybe there's closer to 100." So, somewhere in there.

If you think about providing all of those mineral co-factors that keep your cell operating in that aerobic way that generates the most ATPs, so that all of those functions, autonomic and otherwise can... It's an incredible support to the whole system. Yeah. [crosstalk 00:38:50].

Dave:

Well, guess what's in my mineral water right now? So, I opened a bottle of mineral water and I poured some of your minerals in there, and I've just made a habit of doing that because it's easy. But my normal, most reliable dose is, I make my first cup of Bulletproof Coffee in the day, and I just add it in there, and you can't taste it, and all of a sudden, I'm getting minerals that I wasn't going to get in another way. Some of the other studies though, they're showing noticeable effects on eczema... This wasn't a BEAM study, so I'm not making any claims for your product [crosstalk 00:39:20].

Caroline:

Thank you. Thank you very much.

Dave:

But just these complexes, because they're reducing the inflammatory allergic response. And there's another one that showed, after four weeks of daily use, and this was relatively high dose of fulvic, decreases in lipid peroxidation, and significant increases in glutathione, which everyone who has been listening for any amount of time knows it's really important. I make a liposomal glutathione capsule for Bulletproof. It increases SOD, which is an anti-oxidant that your mitochondria make, that let you handle extra free radicals and catalase, which is another important antioxidant that cells make. So, gee, I feel like there's a little bit of science backing up this stuff, but what would happen if you dried out a bottle of BEAM Minerals, and you had whatever was left at the bottom and you took that in a pill, would it do the same thing?

Caroline:

It would. We actually do have a capsule that we usually suggest it just for traveling, because it's hard to travel with these big bottles of liquid. It's not as bioavailable, so your body does have to first break it down to absorb and assimilate it, but it's highly concentrated. So, yes, it would do the same thing, just you'd have to take more.

Dave:

You have to take more because the particles aren't all small dalton particles, you get big particles, and some of it will break down, some of it won't. I'm assuming that's why the liquid's better.

Caroline:

So, when you think about these ionic... The way I like to describe it for the laypeople is, think of it like it's already digested, it's already in the form that your cells need it to be in. Nothing has to happen prior to it being used. So, that's like, when you drink it, it immediately is available. Whereas if you take the capsule, or you dried that liquid out and ate the dust that was there, you would have to first digest it and break it down into those chemical components that can be used really at an atomic level, actually, in your body for the absorption process.

Dave:

Okay. That makes sense. So, basically you want to take the liquid if you can, because it's going to be fully absorbed, but the pills work if you need them in a pinch.

Caroline:

Exactly, exactly. Yeah.

Dave:

So, we know that gut bacteria like it when you eat plants, and they like prebiotic fiber... That's a big part of Fast This Way, I talked about it in Super Human as well, it's anti-aging. There is no prebiotic fiber in BEAM Minerals or in fulvic and humic, but there's a ton of minerals that bacteria like. And there's very interesting studies on the composition of gut bacteria when they're exposed to these super concentrated plant minerals. What studies have you seen, or what do you know about that?

Caroline:

Well, in fact, I was just reading a study the other day that was saying that particularly, the humic is one of the best prebiotics that you can use for the gut, for creating an environment for the best of the flora in the gut. That when you infuse it with this particular humic substance, our complexes, that it creates an incredibly healthy environment for the positive gut flora. So, that changed my mind, I had never really thought about humic as a prebiotic on its own.

Dave:

I don't know that it's a prebiotic, but we know that it influences the good guys to grow more, at least I've seen a study like that when I was doing the research for this show. And for Upgrade Collective members, I just pasted the most foundational study there. And for guys in Clubhouse-

Caroline:

Oh, thank you.

Dave:

... or on the main podcast, I will include that and a couple of dozen other studies in the piece that I'm writing for daveasprey.com. That will probably be out about when the podcast comes up. But it was fascinating for me because this has been circling in the world of biohacking forever, and you see these people... And I'm going to be a little bit blunt here, they're usually the ones who believe they don't need to shower, or are like-

Caroline:

[crosstalk 00:43:50].

Dave:

... "Oh, yeah, [crosstalk 00:43:51], this stuff is great. I put it in my blunt and I smoke."

Caroline:

[crosstalk 00:43:55].

Dave:

And you're like, "Come on, let's get a little bit sciencey." We've been talking for a while, I've been playing with your stuff and noticing a difference, but I also had a little bit of a... This is kind of like maybe older research, maybe it's not that good, but I decided I was going to give it the Dave level of diligence and really dig in on it, because I've noticed a difference. Because on the surface, it makes sense, but when you really dig in on the research, it's like, "Oh my God, there's so much here, but almost no one knows about it."

Caroline:

Exactly.

Dave:

So, putting it all together in this interview, I think is just valuable for people. And it's a very affordable way to get a broad spectrum minerals that actually go into the cells because-

Caroline:

Exactly.

Dave:

... delivery system is what matters for nutrients. Even something as simple as Bulletproof Coffee, why can you not eat a stick of butter and drink a cup of coffee? It doesn't work if you do that, you will just feel weird. Okay? But if you blend them, it creates micelles, and it changes the structure of the water, and suddenly, it has completely different effects on something called CCK, right? It's the delivery system that matters. And so, I think for minerals, there's something to be done here.

So, yeah, I take my multi-mineral complexes with a little bit of all the different mineral salts and different forms of minerals in it, but I also put this in my coffee, because now I'm getting minerals that

have a different delivery system, and they're doing stuff at the cell level that you're not going to get from the salts. And I think it's one of those... Look I could spend all day, sometimes I do, looking at all the hundreds of different supplements, and like, "What do I want to do with my biology today? Because I have [inaudible 00:45:32]... I'm lucky enough and fortunate enough to be able to have hundreds of different bottles of vitamins to play with, plus it's my job, I made it that way, so I get to do that.

Caroline:

Hopefully, you like to take a lot of pills, I hate to do.

Dave:

It doesn't bother me. I can take probably 80 in one handful on a glass of water, and people are like, "What did you just do? You're like a seagull." But what you end up with, is you're like, "Okay, is it worth it?" Right? How am I going to feel today? And I'm going to live a lot longer if I do it? Because otherwise, this one magic vitamin might just not be worth the trouble to open the bottle and take it today, even if you take the cost of it out. But this stuff, A, I dump some in my coffee, it's not that hard to do, but it's also a very broad spectrum, and it's got a high-performance delivery system [inaudible 00:46:13].

I think it's worth it, and it's something that I consider to be a permanent evolution of my stack of stuff that I'm going to take. And I imagine taking this stuff for the next a hundred something years, because I think it's that important. There are some things that are not negotiable, if I miss a day, I'm not going to die. [inaudible 00:46:30] take it every single day, but the vast majority of times-

Caroline:

That's right.

Dave:

... by my espresso machine back there, I got my bottle of BEAM Minerals. I mean, I just pour it in there, and it's invisible, it's not inconvenient.

Caroline:

The other thing that I say to people is, if you're spending a lot of money on your health, and you're taking a lot of supplements, you absolutely need to be taking this humic and fulvic, because first of all, the fulvic is going to supercharge every single other thing that you put in your mouth. It's going to help you get more nutrients from all the food you eat. In fact, at this point, I am not a big alcohol drinker, but when I do drink, if I take a small bit of alcohol, because my system is full of this fulvic, actually, I get almost immediately high. So, they use this term, it makes water wetter, but basically, what it is, is these humic and fulvic are bringing more of whatever you put into your body into the cells where it's utilized.

Dave:

So, you can save money on alcohol enough to actually buy a bottle of BEAM Minerals just by ordering less tequila. You heard that here first, guys.

Caroline:

No. It is funny because somebody actually bought me a bottle... I really like very good whiskey, but I hardly ever drink. So, somebody bought me a bottle and I said, "This is going to last me two years." But seriously, kind of my mission I feel is that, if you're spending money on your health, you should be taking

these humic and fulvic minerals, because they're going to take everything else you're doing and supercharge it.

Dave:

And I have one more question for you before we get into questions from the audience.

Caroline:

[inaudible 00:48:22].

Dave:

Every time we've been emailing back and forth, and I talk about humic and fulvic acid, you always get mad at me, and you say, "No, there are complexes and there're minerals." What is the difference between fulvic acid and fulvic complex, the one to use in BEAM?

Caroline:

Yes. It's actually an important distinction. So, it has to do with the way that they're extracted. So, first of all, just generally speaking, we have a proprietary alkaline extraction process that does not result in humic and fulvic acids, okay? Fulvic acid is the colloid, okay? And colloids have no electrical charge, they're very large molecules, they don't absorb into your membranes, et cetera. Were you going to say something, Dave?

Dave:

And colloids, for people listening, it just means particles suspended so they won't settle out of liquid.

Caroline:

Yes.

Dave:

Right. Okay.

Caroline:

Yes. But they're very large molecules, they have to be broken down [inaudible 00:49:23] completely, they're completely different. So, the humic and fulvic complexes, which it took us a long time to understand how to explain this to people, we had lots of other language, but they are not acids. So, one of the things to get clear on is, in agriculture, they also use humic and fulvic. The people who know about humic and fulvic are the marijuana growers, the farmers, because they are putting these things in their soil to supercharge their plants. They are using humic and fulvic acids. So, they're humic and fulvic that have been extracted using hydrochloric acid, and that's a whole chemical process that we could get into.

Dave:

And you don't do that.

Caroline:

We don't do that. Right. It's a totally different process.

Dave:

So, what do you do instead?

Caroline:

Well, I can't actually describe it in detail, because it is a proprietary process, but it is a chemical process in which we're extracting the humic and the fulvic separating them out of the humate.

Dave:

[crosstalk 00:50:27]. Everyone knows that proprietary processes are what bad people use. I'm totally joking. I don't give away how I keep the mold out of my coffee, and how I test for it.

Caroline:

Exactly.

Dave:

And the people who are trying to sell competing stuff are like, "[inaudible 00:50:41] you won't tell me how to do it." I'm like, "Yeah, right, Coca-Cola doesn't give you the original recipe either." So, that's no problem. But you guys are not using an industrial extraction using hydrochloric acid, because it doesn't yield the particles that you want.

Caroline:

Correct.

Dave:

Okay.

Caroline:

Correct. That's exactly right.

Dave:

I'm okay with that.

Caroline:

Thank you. Yeah. Yeah.

Dave:

All right.

Caroline:

Well, great.

Dave:

Shall we take some questions from the audience?

Caroline:

That sounds great.

Dave:

All right. I'm going to go first to Upgrade Collective and then to Clubhouse. All right. If you'd like to ask a question here, raise your hand on Zoom here for Upgrade Collective. I know Brandon wants to add something, he's been reading the research I posted. Brandon... All right, hear we go, Brandon, you don't know how to raise your hand. All right, Brandon, just unmute yourself, ask away.

Brandon:

All right. Hello. I had a question about... I feel like trying to get to the bottom of the disease process is kind of like unknotting a ball of yarn, and you're trapped to sort of figure out what to do in what order almost. And I've heard some people say like, "If you have symptoms of chronic infection, don't take minerals, or don't take certain things that you think will bolster your system, it'll actually be added to the biofilm of some sort of like infectional matrix."

But I think the way you're talking about fulvic and humic, it seems to be a bit different. I didn't know about this, there's a knowledge gap, but do you think it's contraindicated to take this for someone in a certain situation like that, or do you think that's just kind of BS? You don't think it can make them stronger, the problems that someone could have?

Caroline:

Dave spoke about... The very beginning, he spoke about the imbalances that can occur in a system. So, if you start saying, "Oh, I'm having a problem and I need a whole bunch of copper," you're not going to take a pill of copper, it would completely imbalance your system. When you talk about the humic and fulvic, you're talking about trace elements, these are very, very, very small atomic level components. So, in nature, if you have a tree that's not doing well, the mycelium takes the humin in the soil and it delivers the minerals to that plant in these trace amounts.

The one thing from my research and my own personal experience, I've tried taking all sorts of things, calcium pills, and magnesium, and potassium, and all these things, and they never did anything for me. But these trace elements provided to my body in this ionic format that can be absorbed and assimilated so effectively, they made just the hugest difference, and without having to take huge numbers of pills or anything.

Dave:

One of the studies that I looked at showed that using these things topically on staph infections... This wasn't a BEAM Mineral study, this was looking at general humic and fulvic complexes, to be really clear, so you guys didn't do a specific study on wound healing. But the science around this type of molecule showed speeding of healing that it was specifically, I think, against... It was a staph, a type of staph infection, and improvements in healing, including in infectious circumstances.

So, it could be though, if you have a specific thing that needs more of one of these things, and maybe it would take it out before something else. And there are some longstanding things like Lyme co-infections like Bartonella, where they're actually destroying cells in the body over time, so they can use the minerals and the proteins in the cells to replicate themselves. And there are some people who say,

"Oh, you should starve certain minerals during that," but there are many other people who say you shouldn't. So, my general consensus, my general perspective on this is that making yourself deficient in a mineral to try and beat a bacteria, seems like a bad idea. That you should give your body everything it needs in order to effectively run at full capacity so it can beat an infection.

And that even in a case like Bartonella, which is one of these slow growing, very hard to kill things that comes from ticks, or in my case, vampire bat bites that I had when I was a kid... Yes, a vampire bat bit my neck once. And what ends up happening there is, you want to give enough minerals that it doesn't need to break down cells, and then you can go kill it. But if instead, it's constantly attacking you, then it doesn't work as well. So, I would say the jury is out on that stuff, but it's pretty interesting.

Caroline:

Another example-

Dave:

[crosstalk 00:55:48].

Caroline:

Oh, go on. So sorry.

Dave:

No, no, no, go ahead. I was going to take another question, but what's another example?

Caroline:

Well, one other example is a person I know who had cancer, and he had gone through chemo, and then he had ended up with a gut bacteria. And he said his doctor told him that he had high levels of iron in his system, and he shouldn't take any minerals, okay? Now, the fact is, that's a misunderstanding of what the humic and fulvic are, because if you think about humic as a chelator and fulvic as a chelator, they are actually going to support the removal of the excess iron out of your system. So, again, they support homeostasis of the system, that's just their natural thing that they do. Okay? Thank you.

Dave:

I love that example. Let's [inaudible 00:56:42] over to our Clubhouse, I just invited Richard into the room. Richard, ask away.

Richard:

Okay. Yeah. I was just curious [inaudible 00:56:47], what is your line? What's your brand? I just went to Amazon to look for folic and humic, and there's bazillion things. What is your line? What should I be looking for?

Caroline:

Yeah. We actually don't sell on Amazon, sorry to tell you, we made that corporate decision. But you can go to beamminerals.com, BEAM Minerals, like beam of light.

Dave:

By the way, use code, Dave, and they'll give you 20% off. People listening to the podcast always get a deal whenever I can negotiate it. And it's worth saving the 20% and typing your address in it. At beamminerals.com, use code, Dave. I have done a lot of diligence here, there's a wide variety of sources where you can get it, and the people who've done it for 20 plus years and have the level of expertise that Carolyn has here, that's usually the ones who actually go to the trouble of doing it right, because they know what right looks like.

Caroline:

Yes.

Dave:

I've seen so many times when people are like, "Oh, MCT must be good for you." So, they take the cheap one, the MCT that's used for fracking, because there's too much of it, and like, "Oh, we'll sell that to you like it does the same thing as the magic MCTs." I'm like, "No, guys, you did it wrong because you didn't know."

Caroline:

Exactly.

Dave:

So, support good research by buying from reputable companies wherever they sell. Thank you, Richard, for your question.

Caroline:

And remembering again that humic and fulvic acids are not the same as humic and fulvic complexes. They do not do this... They're not going to act the same way in your body.

Dave:

All right. Let's take another question from [Santoso 00:58:20] on Clubhouse.

Santoso:

Yeah. Thank you for the opportunity. But my question is actually not related to the topic, is it okay? Yeah.

Dave:

Yep, we can hear you.

Santoso:

I have some information because of some injury [inaudible 00:58:37], and that's why I do keto, and the inflammation is reduced. But the first time I go into keto, I feel hyperactive, I feel so much energy, but after that, I never have the same experience. [inaudible 00:59:02], and if I do fasting also more than three days, I don't feel like the energy from the keto, so maybe you can help me... What happened there?

Dave:

There's definitely a need to cycle in and out of keto, it's a massively important thing. And it drives me nuts because the Bulletproof Diet was one of the first modern keto books, post Atkins Diet, I'm like, "Guys, you can't do it that... Go in and stay in forever." But there's a huge amount of mineral changes that happen with the keto diet, and you actually need a lot more minerals. Caroline, can you talk a little bit about ketosis and minerals, and specifically the BEAM Minerals that you make?

Caroline:

Yes. So, we have another brand also called Keto-BEAM, it's the same products, but we just created a different brand to talk specifically to people who are doing keto. And there is so much to understand about what happens in the body when it becomes fat adapted, and how you have to provide the mineral supplementation, and the electrolyte supplementation necessary to be in healthy ketosis. And there are a raft of things, of course, if you're doing keto, you've probably heard about the keto flu, that is all sorts of different symptoms from headaches, and aching, and sleep issues, all sorts of different things, and most of them are related to this issue of mineral imbalance, or electrolyte imbalance.

So, when you're going into ketosis... And, Dave, you know much more about this, so I feel almost embarrassed talking about this in front of you. But really the bottom line is that, when you are doing ketosis, cycling in and cycling out, particularly when you're going in, and when you're coming out, you need to be providing the right balance for your cell, for your cellular system, to do the work of shifting into the fat adapted state, out of the fat adapted state. Is there something else that you would say, Dave about that?

Dave:

I think cycling is the most important. One thing that happens is, if you go in ketosis all the time, your body stops paying attention to being able to metabolize glucose nearly as much. So, it downregulates all the enzymes that give metabolic flexibility, and you actually can get insulin resistant. And it requires different minerals to make the enzymes that allow you to digest carbs and use glucose for energy, versus for using ketones. So, you see a change in your enzyme activity.

Well, if you're going to be switching back and forth, you want to make sure that you have a full spectrum of minerals, including things like iodine, which I know you guys actually iodize BEAM Minerals to make sure you're getting enough iodine, which is another reason I like your product. But what you end up with is saying, a mineral sufficiency is going to allow you to have maximum metabolic flexibility, because you have the raw ingredients to make the enzymes that you need to run on whatever fuel is available to you, and that's really one of the hallmarks of being hard to kill. So, you can get your energy back if you have enough of those enzymes.

Caroline:

One of the ways I like to describe it is, if you think about inside your gut, it's like a big puzzle, and all of those ionic receptors are like puzzle pieces, and they're waiting for the particular puzzle piece that's going to fit with them. And if you don't have any in your system, they sit there waiting indefinitely, and then you start having all these weird imbalances and symptoms associated with not finding that ionic mineral.

Dave:

Well, thanks for explaining that, and thanks, Santoso for the question. Let's do one more from the Upgrade Collective, and then let's call this an episode. Cass, you had a question you wanted to ask, you

want to come on the mic? She doesn't have her camera on, so who knows? Maybe she's... Oh, there she goes.

Cass:

Okay. So, is it dangerous to do these minerals plus take all the vitamin supplements I'm taking?

Caroline:

No.

Cass:

Great.

Caroline:

It's fantastic to take the vitamins supplements and the humic and fulvic, remembering that the fulvic is going to supercharge those vitamins, it's going to make them more bioavailable to your cells, or make your cells able to assimilate them more effectively. They're also going to help you get rid of any excess. [crosstalk 01:03:49].

Dave:

You nailed it, getting rid of excess-

Cass:

[crosstalk 01:03:50].

Dave:

... is so important, Caroline. And what you're going to find too, on average, humans get about 30% of the minerals in our diet today than we should be getting, and if you eat organic, you might be getting 40%. So, you're probably deficient anyway, so taking the BEAM Minerals, taking the humic and fulvic complexes, that allows you to make better use of the minerals and vitamins, and other things like that, because your cells are better able to absorb them, is a good idea. I'm given the doses in here, I don't have any concerns personally from that, but I love that, Caroline, you don't have any concerns either.

Caroline:

None. None. Absolutely. None.

Dave:

Okay. Thanks, Cass. I didn't mean to talk on top of you there, we have a little mic switch thing. So, if you wanted to ask a follow-up question, unmute yourself, and then we'll be quiet for a sec.

Cass:

No, that's fine, David, thank you. I just wanted to thank Caroline for the answer to that. I'm really excited about the BEAM Minerals.

Caroline:

I'm excited for you also.

Dave:

Beautiful. All right, guys, if you go to BEAM Minerals, B-E-A-M.com, use code, Dave, they'll give you 20% off to say thanks for listening to the episode. And I ask anyone who comes on the episode, or has a product, give the listeners a discount. You might want to try, you might not want to try it, you'll be perfectly okay if you don't try it, and you might be better off if you do.

And I want you to know all the tools available, and if you're on my email list, the one at daveasprey.com, I will send you a link to the research article that I'm putting out about these complexes, because there's a lot of really cool science here. And I'm really excited about the anti-allergy and anti-mast cell effects of these. I think that's way more important than most people think. So, lots of hardcore science, and it's an easy lift, no pills to swallow, dump it in whatever you're drinking, and don't think about it. That's what I do.

Caroline:

Exactly. Or spray it on [crosstalk 01:05:41].

Dave:

Caroline, thank you.

Caroline:

[inaudible 01:05:41].

Dave:

Thanks for doing the hard research, and going to the trouble of actually making a company that makes something correctly, and something that... You can tell it's a labor of love. When you do every little step right, it's different, and you do it because you care and because it made a difference for you. And so, I can see that in just the way you think about stuff. So, I appreciate you being an expert.

Caroline:

Thank you. I'm not sure I'm an expert, but I have learned a lot and continue to learn.

Dave:

Well, that's what makes us experts. All right.

Caroline:

Thank you so much, Dave, for having me on the show, it's been an absolute pleasure to speak to one of my iconic people in the world. You have been a great leader to me and I love... I have to tell you, I took your intermittent fasting course recently and thought it was excellent.

Dave:

Aww, thank you.

Caroline:

And so appreciate your work in the world. Thank you.

Dave:

Well, let's both keep doing it, and we'll keep making cool stuff you can't buy, that makes people stronger and better and nicer. And who knows what kind of world we're going to make? But whatever it is, it's going to be better than it is today. Well, that's just how the world works. So, thank you, Upgrade Collective. If you guys are listening and you don't know about that, our Upgrade Collective... You want to make some cool new friends who care about being better every day? This is the place to do it. And if you're on Clubhouse, guys, thank you for your questions. And I'll be putting the occasional podcast up on Clubhouse, you can ask live questions. I appreciate you following and sharing. And well, guys, sign up for the email, so I can send you this research piece as soon as I'm done writing it, because I'm kind of interested. Have a wonderful day. Good bye.

Caroline:

Bye-bye.