

Dave Asprey ([00:00:01](#)):

You are listening to the Human Upgrade with Dave Asprey.

([00:00:07](#)):

Today I want to talk about something that we all love fat. Okay? Maybe you love it, maybe you don't. When I was really fat, like 300 pounds fat, I didn't love it. I thought it would make me fat. And over the years it became abundantly clear that different fats do different things to different parts of your body. And yes, I'm the guy who has, well, in 2014 there was a global shortage of grass-fed butter because of what we were doing with our coffee. And someone was arrested trying to smuggle butter from Norway into Sweden for Christmas because of butter smuggling. And I really can take credit in the history of humanity, possibly for butter smuggling also bringing grass of butter into Canada many times at a special fest for that. But this is not a butter interview. This is about a kind of fat that I want to say is new except it's not new.

([00:01:02](#)):

We just didn't know about it. It's newly discovered, and it's called C 15. It's an essential fatty acid that almost no one knows about and something that I've been using for a couple of years with grape results. It has a big impact on aging and long-term health. And our expert today is Dr. Stephanie Venn-Watson, who is the CEO of the company who makes this stuff. It's called SNA Therapeutics, and you might've seen her at the last biohacking conference. And Dr. Finn Watson is a veterinary epidemiologist and public health scientist. She worked for the US Navy and a formerly credible organization called the World Health Organization. I didn't see her wins too hard when I said that. So maybe she's cool.

Dr. Stephanie Venn-Watson ([00:01:51](#)):

I love

Dave Asprey ([00:01:51](#)):

It. Does that make me a bad person? And I just said that when I was introducing you. Oh

Dr. Stephanie Venn-Watson ([00:01:55](#)):

No, not at all. And it's great to be here, Dave. Great to be here.

Dave Asprey ([00:01:59](#)):

Yeah, Stephanie, welcome to the show. I'm just teasing you about actually the WO has done a lot of good work and they've done a few bad things that we all know about, but we shall not name because then they turn off our channels. It's so weird how that works. Now, you're also very well educated and did a whole bunch of credentials we could talk about. But what's interesting is that you pretty much discovered C 15. It's also known as Penta decanoic acid, and you've been on NP and BBC and CBS and a bunch of things. What led you to look at odd chain fatty acids? I'm asking because I've kind of had a fetish for those myself as I was trying to figure out what the heck was going on in my own biology years ago. But C 15 is not one that I came across C 17 I came across. But how did you know about this stuff?

Dr. Stephanie Venn-Watson ([00:02:50](#)):

This whole thing was an accident. I would love to be like, oh, I was this genius that knew exactly what to pursue, but this amazing discovery was accidental. It happened a while back. As you mentioned, I'm a veterinary epidemiologist. I was working for the Navy caring for older dolphins. And so the Navy has this population of aging dolphins. Of

Dave Asprey (00:03:15):

Course they do,

Dr. Stephanie Venn-Watson (00:03:15):

Right? So because they live a long time. So when they're at the Navy, they live San Diego Bay, go out into the open ocean every day. Every day they choose to come back, they get great care. And so as a result, Navy Dolphins in the wild live to about 20 years old. Those at the Navy are living 40 50 and now even to 60 years old. So I was brought in to help understand aging in dolphins to help continually improve the health and welfare of aging dolphins. And while doing that, we started noticing a couple of things. The first thing was that older dolphins age a lot like us. We were seeing some older dolphins getting things like high cholesterol and chronic anemia, fatty liver disease, even the full suite of changes consistent with Alzheimer's, which is fascinating, right? But the fact that they're large brain long lived mammals suddenly makes it not so surprising. So long story short, we were able to use an advanced technology called metabolomics to understand and look at which small molecules in the dolphins predicted the healthy aging dolphins versus those that weren't aging as well. And we had predicted it was going to be omega threes because all dolphins eat are fish. And lo and behold, omega threes didn't even make the list. And there was C 15 along with other odd chain fatty acids right there at the top. So that really tipped us off to healthy aging higher C 15.

Dave Asprey (00:04:48):

So you looked at the best aging dolphins and they had the highest levels of this in what tissues or just in their diet, or were you doing biopsies? How do you know?

Dr. Stephanie Venn-Watson (00:04:59):

Right, exactly. So as part of their routine healthcare, Navy dolphins get routine blood draws. So they stick their tail out of the water, they get blood drawn, and that's done as often as once a month for their entire lives. The Navy had the foresight to archive all of these blood samples. They do full CB, C and chem panels on every single blood value they take. And they put this all in electronic medical records. So hence the epidemiologist, right? They said, we have all this data, all these samples, let's put it to work. So they were able to detect C 15 in their blood samples. What was really exciting, which is a point you were getting to was that the C 15 was coming from their diet, that there was some types of fish that had C 15 that was in the and other types of fish that had no C 15 at all. And that's what was dictating who had higher C 15 and who didn't.

Dave Asprey (00:05:56):

Wow. So this is one of those things where you couldn't make up this story. So I was in the Navy and we were looking at dolphins, I mean aging dolphins, and they suck their tail out of the water. So what's interesting is this is a major discovery because it's the first essential fatty acid that we've discovered in a hundred years because we thought we knew them all. And just this one question about why are these aging differently than those, it's important. I got to ask what kind of fish has it and doesn't have it?

Dr. Stephanie Venn-Watson (00:06:32):

So for dolphins, it was they have about five to seven different types of fish they have access to, and it ended up being mullet and pin fish were the highest C 15 content fish while things like capelin and squid had no C 15 at all. So mullets not a common fish that we eat. And the other component of it, Dave, is that dolphins eat the whole fish. And when we looked at where C 15 was even in these high C 15 fish, it was primarily in the skin and the heads of the fish, which are the typical parts of the fish that a lot of us don't eat.

Dave Asprey ([00:07:12](#)):

I wonder if you took herring and let it spoil underground for like five years the way they would in some of the Scandinavian countries if it grows pento deic acid, what do you think?

Dr. Stephanie Venn-Watson ([00:07:22](#)):

I think you're spot on, I think, and if you look at these, these cultures where we eat the whole fish, I mean sardines, right? You eat the whole fish. That gives a lot of countries, A lot of times I get questions where for humans, our primary source of C 50 for most of us is dairy fat. But people say, well, what about the cultures that don't eat a lot of dairy? The answer is fish. The cultures that don't eat a lot dairy, they tend to also be really high fish eaters including whole fish.

Dave Asprey ([00:07:56](#)):

And there's no pento decanoic acid or C 15 in dairy or fermented dairy or anything like that, or is there

Dr. Stephanie Venn-Watson ([00:08:03](#)):

Is? So there's C 15 in dairy fat. And here's the important point, which is exactly along the lines of where you opened this conversation where if it is low fat, it has half as much C 15, if it's non-fat, it has no C 15 in it. When we look at milk fat as a whole, there are over 400 different fatty acids in milk fat. Only 1% of all those fatty acids, even in whole fat dairy is C 15. So it really is this trace essential nutrient. And then you'll love this part, which is that when cows are fed grass, they have twice as much C 15 in their fat than cows that are fed corn. So you are already on it. You already knew it

Dave Asprey ([00:08:53](#)):

At this point. The fact that governments allow cows to eat corn, instead of saying, we're going to phase out corn because it's bad for cows and bad for humans. And yes, it would take 10 years or something, we'd have to destroy a couple of big companies to do it. I'm okay with that. But you look at conjugated linoleic acid, which is another important thing that comes from grass fed cows and you don't get it in other cows, the list goes on and on. So the reality though is even if you're eating a lot of butter, I'm assuming that cultured or fermented butter is probably going to be better than not. The idea that when you ferment this stuff, you get good things out of it is important, but you're still not going to get very much C 15, you'd have to eat a lot of butter.

([00:09:44](#)):

And who knows, maybe I was correcting my C 15 deficiency when I went on a very high butter diet because what I found and when I was running Bulletproof, and guys, if you haven't heard endanger coffee because who knows what you might do? That's my new coffee brand. I have nothing to do with Bulletproof. But when I was running Bulletproof the first two years that people go on this high butter diet, I can't get enough. And I was the same way. I was butter and everything and it was like a deep need. And then after tears, I was like, okay, I like it. But it was like something got upleveled inside me, but I was eating a lot like a stick of butter a day and everything. And I'm starting to wonder was I trying to get C 15 that way I probably could have just taken a little pill and it would've known the same thing because you've got it concentrated. Okay, so you've discovered this thing in dolphins, people who are trained to think scientifically and to just not take everything they here with a grain of salt. Do you have any evidence other than dolphins, a little bit of research maybe tell me what you got.

Dr. Stephanie Venn-Watson ([00:10:53](#)):

Just a touch. A touch. So that was, gosh, 10 years ago when that first discovery was made. And then really from there, it was about going from this intriguing hypothesis that was based upon association,

right? Higher C 15 associated with better health, and really now going down the road, and we really took the pharma approach, Dave. We were thinking that this could be a candidate pharmaceutical for specific diseases. And so we really went down the pharma route with assessing the activities of this molecule bioavailability, what levels do we need dose dependent effects? So we did eight studies over three years. This was assisted in part by Dr. Ed Dennis, who is a leader in lipids. He was the editor in chief of the journal for Lipid research for 15 years. And we first went to him with our hypothesis from dolphins and Dave, he's like, he's like, it's great, but chances are that the whole lipid world did not miss this. We've known about C 15 since the 1950s. Chances are, but the dolphin story's intriguing. So here are the studies that you would want to do. So long story short, we did these eight studies over three years and we were able to show that C 15 direct pure C 15 in the lab not only had beneficial activities, which includes things like activating A MPK, inhibiting mTOR, activating PAR alpha delta, all of these things in the longevity space that David inside and out.

Dave Asprey ([00:12:35](#)):

If you're listening to this going, what did you just say as read superhuman? This is your Bible for longevity. This is all the stuff that I do. Every single thing there is explains for you. But what you just heard from Stephanie is that if you were to make a checklist of the things you want to do to make your body live longer, C 15 does many of those things. And these are some of the biggest levers that we know about for all the different seven pillars of aging. So go out and do the gene therapy stuff that I did if you want to and you can afford it, but that's very high end crazy land stuff for most of us. That's kind of proof of concept. This is something that hits a lot, a lot of check boxes. And there's something else that I've noticed as a pattern.

([00:13:24](#)):

When you have these novel, I'm going to call 'em novel ingredients, these new supplements, it used to be people would sort of say, well, I made up this thing on my kitchen sink and I make some of this and some of that. But you spend 10 years researching this, and there's a few other compounds where I've gone deep on the science on the show, things like sperm aine or ULI a where there's 10 to 12 years of heavy duty university research with pharma level results and pharma level studies, but supplement level pricing now, I love that. And this is the future. The big pharma companies don't love that and I don't care because if they love something, it's probably bad for me. So there's that, right? I'm not saying I don't use pharmaceuticals. I have some right here. I love pharmaceuticals for longevity. I just don't like what the industry does. So thank you for not making it a thousand dollars a month pharmaceutical because I don't want to keep mullet. That sounds gross.

Dr. Stephanie Venn-Watson ([00:14:21](#)):

You're welcome, Dave. And when as all of this research was coming out and we were able to show these activities, these longevity enhancing activities were dose dependent. And importantly, the dose that was the most effective matched the levels that we could achieve in our bodies. So by taking 100 to 200 milligrams of C 15 per day, this all lined up. And in fact, our advisors came to us and they said, once we were able to conclude, not only is this an active and beneficial saturated fatty acid, but it's meeting the criteria of being an essential fatty acid, which means that our bodies must have certain levels of it just to maintain our baseline health. And if we don't have enough, we can develop diseases, which we'll talk about this thing called cellular fragility syndrome. So when all of this started coming out, our own advisors from the pharma space were saying, you have a moral obligation to bring this to the world as a supplement, as a food ingredient, because this is something like C 15 deficiencies in scurvy and vitamin D deficiencies in Brits. We don't want this just to where physicians can prescribe. This needs to be accessible to all. So we're in that first stage of accessibility.

Dave Asprey ([00:15:40](#)):

Wow. I love it. And I get a little frustrated when I see these things, even things like semaglutide where it's a thousand dollars a month, especially in the us, it's nonsense, right? Yes, we have to pay for cost of research, but it doesn't cost as much as they say it does or doesn't have to. How much do you think you spent in total on research proving that C 15 works?

Dr. Stephanie Venn-Watson ([00:16:04](#)):

Probably about \$10 million to get it all done. And some of this was funded by Office of Naval Research, a good amount of it. And Dave, you love this. It was funded specifically to help improve the health of Navy dolphins. So the Office of Naval Research says, Hey, dolphins aren't getting enough C 15 from their fish and we can't find fish anymore that have enough C 15, so we will fund you to develop a supplement, a pure C 15 that then could be provided to the dolphins. So we make this joke about this is no, were harmed in the making of bi dolphin supplement.

Dave Asprey ([00:16:47](#)):

This is such a great story. Although I have to wonder if maybe one of the reasons they can't find the fish has to do with incredibly loud sonar that they're blasting the oceans with, but we won't say that out loud.

Dr. Stephanie Venn-Watson ([00:16:59](#)):

Well, I would say it's probably, it's a couple of things. It's warmer waters so they don't have to be as fat. So they're losing their fat and overfishing. So when you keep fishing, a study came out in science justice last year showing we have the same mass of fish in the ocean, but it's just a lot more smaller fish. The fish are literally getting smaller around the world, and if they're smaller, there's a good chance they have less C 15 in

Dave Asprey ([00:17:26](#)):

Them. Got it. They didn't have time to accumulate.

Dr. Stephanie Venn-Watson ([00:17:29](#)):

That's right.

Dave Asprey ([00:17:30](#)):

One of the big visions for biohacking, just when I started this crazy idea back in 2011, we're going to figure out what actually works. And once we know that we can then make products and food instead of saying, we're going to make the stuff that's supposed to work and then religiously stick to it, we're just going to use the data. And then when there's knowledge that's real based on science and there's demand for what's real, then industry will naturally make that. And you're an example of that. You're saying, okay, this is something we didn't know about. This is real. So now let's share the knowledge and it'll increase demand for it. And since the ways we would get it by eating buckets of butter, which is probably, well, actually it works really well. There's evidence for that, but it's expensive and it's also relatively difficult. And then we could say, well, let's eat fish. It's good for us. It turns out a lot of fish doesn't have this in it and we can't get enough. So with all these things going on, you can synthesize it. How long did it take you and how hard was it to figure out how to synthesize C 15?

Dr. Stephanie Venn-Watson ([00:18:40](#)):

So we spent about three years and to figure out a method, we started by saying, Hey, could we extract C 15 from nature? Like how omega threes are done with fish oil? Those aren't pure, it's still fish oil, but fish oil that contains a decent amount of omega threes for us because C 15 is present at such low levels. And

we were really heading toward this pharma grade world because all the studies that have been done on C 15, which is @discovercfifteen.com is where we put all of the peer reviewed studies, not just ours but the worlds. All of that was being done with this pure free fatty acid C 15 molecule. So that's what we wanted to provide. So you know what you're getting that you're getting the ingredient that is science backed. So we thought, well, if we're going to be able to create this bioidentical C 15 molecule, which is very easy because it is such, it's 15 carbons in a row, that's it. 15 carbons in a chain, very easy to make. We also said, Hey, if we're going to do this, let's also make it not only pure but vegan friendly. So we are, what we do is we use a plant-based C 14 and we add a carbon onto it and there you go. You get a pure C 15 molecule. Every single batch is tested for that purity. So it's why it works.

Dave Asprey ([00:20:12](#)):

I'm still confused by vegan friendly. I haven't met very many friendly vegans. They're usually too tired to be friendly. Is that just me?

Dr. Stephanie Venn-Watson ([00:20:20](#)):

Well, this'll help them because probably they're going to be deficient in C 15. We could talk about the mood enhancing benefits later if you'd like to.

Dave Asprey ([00:20:32](#)):

I have to apologize. All my vegan friends and I actually have lots of them. Yes, it's okay to tease each other. You can call me a fat butter eater or whatever, but it's all in love and jest. And I was a former vegan and a very difficult one. So just to be clear, if I triggered you, stop carrying a loaded gun and get strong there. So what I want to get back to, I just realized if I insult vegans, I have to tell them it's an insult with love because otherwise people yell at me. The idea here that you can take just a regular fat and just edit it a little bit and then make it so that it's beneficial. And yes, if you are a vegan and I understand there are three reasons you might be, you probably want to do this. You also need to be getting the other things like EPA and DHA, the other fish oils or the omega oils.

([00:21:21](#)):

There's so much, I'm not going to call it misinformation. Misinformation is a word that people use to try and feel superior over other people. Like that's misinformation. No, it's called you are wrong. Okay. That's how it all speak. And when people are feeling like they're like your nanny or your daddy or your mommy, that's misinformation. No, no, we don't do that. So bottom line is fish oil is probably good for you. EPA and DHA, and there are arguments that too much of it probably increases lipid oxidation in the body. Adults need more. EPA kids need more DHA, so it's essential, but you shouldn't do what I used to do when I was fat and trying to desperately lose weight is drink four out of the bottle of fish oil. It's actually not good for you. So there are doses of that, but C 15 is different. You don't need anywhere near the same amounts of C 15 as you would from these other things. And if you're a vegan for god's sake, get your fish oils, you're completely devoid and deficit and you're going to need your fatty 15 as well because you just cannot get it from plants no matter how much you want it to be there. Wanting doesn't make things happen. And it's just important. I feel like some people need to hear that.

Dr. Stephanie Venn-Watson ([00:22:32](#)):

Yeah, it's a great point. And a common question I get is what's the difference between if we're talking about essential fatty acids, right? The Omega-3, omega six, and now C 15, and the way we explain it is that C 15 is a saturated fat. So while Omega-3 and omega six are these unsaturated fatty acids, they just like you're saying, is oils at room temperature. They have these double bonds that are susceptible to lipid peroxidation. C 15 is the opposite. It's a saturated fat, no double bonds. So it's highly resistant to lipid peroxidation. And one of its main roles is that it actually goes into our cell membranes. It makes them

more stable resistant against lipid peroxidation and evolutionarily. There is a hypothesis called the cell membrane pacemaker theory of aging brought up by AJ Holbert. And he showed that the more saturated, the more stable the fatty acids in our cell membranes, the longer a mammal lives. It helps to explain why humans, dolphins and elephants live longer than mice. So really all this is Dave. It was just like an accidental tapping into an evolutionary trick that's been used for millions of years to help long live mammals live longer stability of cell membranes protect us against this lipid. It's just wonderfully simple and elegant little molecule that went into hiding. This

Dave Asprey ([00:24:00](#)):

Just makes me so happy. It's one of the reasons that I've been a proponent of saturated fats over polyunsaturated seed oils and all that is stability of your lipid membranes is so important because unstable membranes can't express receptors through them very well. And because they create lots of reactive oxygen species. And if that was too big of a mouthful, and I recognize not everyone's a longevity nerd like us, just look, if the outer layer of your cells, which is made of tiny little droplets of fat is made out of the wrong fats, it doesn't work very well. And then you get old and die and suffer greatly first there. I think I said it right. I

Dr. Stephanie Venn-Watson ([00:24:39](#)):

Love it. That's great. That totally worked. So our most recent paper is all around this, Dave. So that we published a couple of weeks ago on metabolites and what we showed, this is the culmination of the last 10 years of research. And what we showed was that if our cell membranes have less than 0.2% of C 15 in it, our cell membranes become fragile. This is called cellular fragility syndrome. And when that happens, exactly like you elegantly said, they get fragile, they fall apart. We age faster. That increases our susceptibilities to diseases like type two diabetes, heart disease, fatty liver disease. And another cool part of this story is that in 2012 there was a group of scientists at Columbia University and they published an entirely new way that our cells were dying called fortosis.

Dave Asprey ([00:25:41](#)):

What's it called? Op ptosis.

Dr. Stephanie Venn-Watson ([00:25:43](#)):

Op ptosis. So pharaoh for iron and then ptosis

([00:25:49](#)):

Sda. So ptosis, I hadn't even heard about this until just maybe 18 months ago. So it's an entirely new way that our cells, prior to this, there were only three ways that we knew our cells died. This was a fourth. And coincidentally that same year in 2012, we published a paper showing basically this syndrome in dolphins with iron deposition cell death. And it took those 12 years for really the whole story to come together to show that C 15 deficiencies cause op ptosis this new form of cell death that then we argue is explaining why younger, younger people are getting older people diseases and it's fixable. It's a nutritional deficiency. We can fix this.

Dave Asprey ([00:26:44](#)):

I always say before I was 30, I had arthritis when I was 14, I had severe cognitive dysfunction and then I had high risk of stroke and heart attack and fasting blood sugar, one 17 prediabetes and a bunch of other crap in there as well. And I had all the diseases of old people. So I learned biohacking from people in their eighties reversing their age, and it's working on me in my twenties and that's how I got to know what I know. And so we are seeing the diseases of aging. How many juvenile type two diabetes cases were there? If you go back 30 years, it was so rare and now they're just all over the place. In fact, I don't even

know if it's half of kids at this point. It's crazy. And one theory is that it's because of the toxins. They're spraying crap everywhere.

[\(00:27:35\)](#):

They put glyphosate on our food, there's atrazine, there's all these things that are mitochondrial disruptors and gut biome disruptors. And then the other model says it's nutritional deficiencies. Well, they're both independently true, but what very few people are looking at is that the combinatorial effects what happens if you have a nutritional deficiency and additional toxins. It's like two plus two equals 10 instead of two plus equals four. And so I find that if you want to live a long time or just be high performance even in your twenties, you need to get the right minerals, the right fats, the right aminos and all the other co-factors. You need to get 'em at higher levels than you're supposed to have because you're getting higher levels of toxins. So you can't just get rid of toxins that live forever and you can't just take a bunch of supplements that live forever.

[\(00:28:24\)](#):

You want to balance them both. And I think C 15 is as important as another famous CC eight years ago, C eight MCT, which I brought to the world as brain octane oil. I could tell from using it that it worked better than MCT oil and C just means how many carbon atoms and most companies were selling C 10 and C 12, which doesn't work like C eight. There was no research though. So I just could tell it worked. I spent more money, I launched a superior product and five years later, university of California at San Diego published a paper showing that it was much more ketogenic than the other C MCTs. And it's funny, you're working with the same university. You see San Diego with your C 15 compound. So guys, if you liked MCT oil and you liked C eight MCT oil in your coffee and everywhere else I put some in my smoothie or in my coffee to this day, you might want to consider fatty 15, which is the C 15. Because like what you see now with the MCTs, you've got 50 peer reviewed studies for fatty 15 or for C, the ingredient and it immune health, liver health, heart health, metabolic health, and that's kind of crazy. How big of a dose does a person need to take to get some of these benefits?

Dr. Stephanie Venn-Watson [\(00:29:55\)](#):

So the dose, the nice thing about a nutritional deficiency and a syndrome is we've really been able to define a critical threshold in our blood. So if we need to have greater than 0.2% in our blood to be able to let C 15 just do its basic functional like cell structure function, let's not have disease, let's not be falling apart. So that's step one is to fix nutritional deficiencies. So there are tests for C 15, so if your doctor has access to a fatty acid panel, they do have to check. But almost all fatty acid panels now include not just the omega threes but C 15. So that could be done that way. We also worked in partnership with Genova to have an at-home blood spot C 15 test that we just announced a couple of weeks ago. Cool. So that's great. I just did mine. I'm waiting for my test results. So waiting for those to come in. And so that allows you to get your C 15 tested from home. You still have to send it in and wait for the test results and that then once you have a test, and we know that every a hundred milligrams of fatty 15 increases your blood levels by about 0.1%.

[\(00:31:23\)](#):

So if you're at 0.2%, the way we put it is you are on the cliff. So your cells are right on the edge of becoming very fragile. And that's where almost everybody is sitting right now because of all the things we talked about. Oh my

Dave Asprey [\(00:31:38\)](#):

Gosh.

Dr. Stephanie Venn-Watson [\(00:31:40\)](#):



So by taking a hundred milligrams of C 15 per day, just these one tiny capsule that then for most people will get you to a 0.25 to a 0.3, which is a safe zone. Sardinia is teaching us something new. So we've always said 0.2 to 0.4%. This is non nutritional deficiency zone. But then a really cool study came out Dave from Sardinia, which is one of these blue longevity zones, one of the places, it's the place where the most men live to a hundred of anywhere else in the world and they have C 15 levels that are on average 0.6, so three times higher than average people. And what they've done, which is fascinating, is they have basically replaced meat. They just have meat maybe once a week and on special occasions, but they've replaced meat with cheese. And their cheese is specifically of their own local goats and sheep that are grass fed and are high altitude. So mountainous grass actually results in more sea 15 than sea level grass. And so they're getting, and then a cheese that we know that's very popular from that Regis Pecorino. So Pecorino cheese has twice as much C 15 as like butter from cows.

Dave Asprey (00:33:03):

Pecorino and manchego are the two cheeses you want to eat, right? Is manchego high as well?

Dr. Stephanie Venn-Watson (00:33:09):

Yeah, that's right. You get this high altitude. So it's hard for us on a daily basis to get access to high altitude grass fed sheep and goat cheese, but it means it's possible. And the reason why sardinians live so long is primarily because they don't die of heart disease. And a separate study done by a group at Harvard showed the higher your C 15 levels, this is non-start Indian just in general, people who add between 0.4 to 0.6% of C 15 in their blood had the lowest risk of developing heart disease. So it's again, just the science just keeps coming and supporting. We need this in our lives. And the reason why we created this pure form is I do believe kids need to have access to fat. Let's not take fat away from our kids and children and the core needs of development, but as we get older, not everybody's going to be able to do what you did. David is like to eat a lot of butter and fat and some people are in fat and butter, fat. There's a lot of pro-inflammatory eating chain saturated fatty acids. So what we are aiming to do is to say, can we just provide just the pure C 15 so that it doesn't have to compete with 400 other fatty acids? And so that's why

Dave Asprey (00:34:31):

You can only absorb so much fat at a time of any size or shape. And I think we have to be friends though because you didn't just say, oh, it has to be grass fed, it has to be high altitude grass fed. How many researchers and scientists are paying attention to that? Not very many, but it really matters. And it's funny, but sheep milk in particular is far superior to cow's milk and it's all A two, which is the kind of non-inflammatory stuff. I get knocked out by cow's milk, I can eat sheep milk. So manchego is what I put when I'm making a pizza. And manchego in some studies even helps with perimenopause symptoms

Dr. Stephanie Venn-Watson (00:35:12):

And it's delicious.

Dave Asprey (00:35:13):

Yeah, it's totally delicious. These are out there and some people tolerate 'em, some people don't, but many more people can tolerate that. And there I just made sure that I'll never be able to find manchego at the store again by saying that. But for 15 years now, I've been doing this thing and it's had massive effects on longevity. So I love it that you're going, it's not just grass, it's high sheed grass. The other thing is I think might've just kind of poked a big hole in the blue zones. You mean it's not the beans,

Dr. Stephanie Venn-Watson (00:35:44):

Maybe different areas. Obviously there's a lot of unlocking the causes, but with regard to the sardinians, and to be honest, I haven't seen C 15 levels in some of these other blue zones. It was just the paper that came out and just really extraordinary. So it does mean that there is an opportunity to get from, so there's deficiency C 15 deficiency, let's be non deficient and healthy, and now there's this world of biohacking optimal C 15 levels that can then really feed into these longevity pathways. So we compared pure C 15, fatty 15 against rapamycin, metformin in a paper we published last year. We showed that C 15 had more clinically relevant cellular benefits than all three of those longevity molecules. And so most closely matched rapamycin, but it's just like nature has given us a longevity molecule and then we somehow crazily took it out of our lives. Oh wow, we just get it back in and let's sit down, do it in an optimal way through this pure free fatty acid form. It's like, let's biohack nature and let's give us a C 15 that can allow us to really, really leverage its longevity and ability.

Dave Asprey ([00:37:08](#)):

I've got to let people know at this point, there's so many longevity people listen to the show because I'm talking about things that aren't yet in the world of longevity. I put them in the book ahead of time or in my books, but anytime I find something new, okay, so it's fatty fifteen.com, use code Dave and you'll save \$15, which is kind of cool with fatty 15. But the reason I know about this is I have trained Instagram. It's hard to do that. They really don't care what I want, surprisingly, but I've trained the algorithm to show me stuff. And probably one of your first ads came out and I'm like, yeah, sounds like bs. Someone's trying to disrupt big fish oil, whatever. But I read the papers, I'm like, oh my God, this stuff is interesting. So I started buying the stuff and subscribed long before, and finally I reached out to my team.

([00:38:00](#)):

I'm like, guys, you should reach out to fatty 15. This is really cool stuff. So I reached out to you to ask you to be on the show because I used the product and I used it not just for a little while. And the research is compelling. And you just said it has effects kind of like rapamycin, but across a whole bunch of different things. So when you're looking for a supplement that ticks a bunch of boxes on the seven pillars of aging from Superhuman, this is something that you want to pay attention to and I think it's pretty reasonable. What does it cost for a month's supply? I don't remember. I know I signed up.

Dr. Stephanie Venn-Watson ([00:38:35](#)):

So for the subscription, it's \$120 for three months. So that gets you at \$40 a month, a dollar 33 a day.

Dave Asprey ([00:38:43](#)):

So there you go, guys. It's not free, but it's not as expensive as rap.

Dr. Stephanie Venn-Watson ([00:38:49](#)):

We get a lot of feedback and go. We encourage people to go to the reviews and we have tons of science. Again, discover c fifteen.com. What's really inspirational for us is really seeing the results that people are feeling. And that's why people say we have over 95% monthly retention rate, which is unheard of in the supplement space. And it's because people feel and see results within three to six months. It's Go science, go Dolphin.

Dave Asprey ([00:39:20](#)):

Now, I mentioned Blue Zones before and I want to thank you for something here. You're an epidemiologist. In general, epidemiology points out amazing patterns. That's why I like AI and big data for this. We can find, oh look, we have all this data. What's the unseen? The problem with epidemiology is it lets you just kind of make up stuff, say, well, I found this correlation, but it doesn't mean that there was a cause there. That's right. And what you do that's different, and I have a hard time with this because

Dan Ner, I love the man and he's a pure, I believe we can extend human life and he's operating a hundred percent from goodness, and he's a pure epidemiologist. So when I interviewed him, it's like, Dan, what is the mechanism of action of being? He goes, I don't know. I just see a lot of people eating beans who live a long time, so I'm going to eat my beans. And to me, that's not enough. I want to test it. So I get my hypothesis from epidemiology looking at big data and then test it. So you did the epidemiology to notice something and then you have 50 studies later. We're pretty sure that that's actually how it works instead of just assuming because we saw it. So do you know about the pigeon random experiment?

Dr. Stephanie Venn-Watson (00:40:37):

No, please, please enlight. All of

Dave Asprey (00:40:40):

Us. It's one of my favorite things. I probably called it the wrong thing. They had a machine that would drop a feed just grain for pigeon at random intervals. And over time, the pigeons started trying to figure out what caused it, and there was no cause. So they developed these amazing dances that they thought was going to cause this, and they prove this over and over, and they were different dances, but they just became convinced that if they just did this thing with their wings, the magical grain would drop. So they were applying causation when there wasn't any. And I feel like some epidemiology recommendations that don't have causation, it's that random pigeon dance, but we saw it, it seemed to work last time. Let's just do it again, and sometimes it works. So just thank you for doing both sides of science because science without epidemiology lacks and epidemiology without causation lacks effectiveness. So you did both and just thank you. It's hard to do because you have to cross both sides. You know what I mean? Yeah.

Dr. Stephanie Venn-Watson (00:41:43):

Well, Dave, thank you for loving both because a lot of times we have purists that are one or the other. And exactly like you said, epidemiology is great for generating hypotheses and finding patterns, but then you got to put it to the test and all of the science and the methodology is there to be able to demonstrate bioavailability, efficacy, mechanisms of action, toxicity, safety. I mean, all of these things, all of those tests are available. So yeah, 10 years. And then that's when our advisors were like, enough is enough kids. Get it out. Keep the science going, but you're there. Let's just, let's start getting it out there. So we're glad that we were finally able to make that jump from the lab to be able to help people.

Dave Asprey (00:42:35):

That's a third thing. The number of researchers I've had on this show, 1200 plus over the last 10 years. So I've talked to a lot of people and I've learned so much including in this interview, but you oftentimes see scientists who are saying, well, I want to make this work, but then they don't do the hard work of making a company to bring it to the world. It's risk. It's a huge amount of time, and it's not the fun part of science. It's like, how do I explain this? And you got to do this. So the three things are curiosity, confirming it with science and then doing the messy work of helping people learn about it. And you have to do all three if you have something that's worthy, right? That's how you discover it, and then that's how you bring it to the world. So I am really happy that you're doing this.

Dr. Stephanie Venn-Watson (00:43:24):

Thanks. And actually, Dave, what you just described is that my Navy physician, husband, Eric and I really came together to develop, to spin out this company from the Navy. And really this is the military way that in the military, you don't do research to just go do research and publish papers. You identify a problem in the field, you figure out how to fix it, and then you fix it. And so it's just a very, I know this sounds crazy, but instead of a lot of times there's sometimes skepticism when the scientist brings a

product to the market. For us, this is what you do in the military. You go put it to work so that you can actually then have effect beyond just publishing papers. Not to knock that, but you're right. It's that third step that if you don't get that third step done, you've greatly limited the contribution to betterment.

Dave Asprey (00:44:20):

Well, I'm really inspired. I've seen so many. I'm thinking of five or six companies I've worked with over the past few years who have so research and they're just doing it better than anything out there. And then doing that hard step to make it come into the world. Are you planning to come to the business of hacking conference that I'm putting on in September in Austin?

Dr. Stephanie Venn-Watson (00:44:44):

We are planning, we're planning on coming Dave, and we're doing our best. We have a little conflict of scheduling, but we're working hard to be

Dave Asprey (00:44:53):

There. Well, I am really hoping to be able to hang out there. And for listeners business of biohacking.com, I am teaching more than a hundred entrepreneurs how I built a hundred million dollars plus business doing something better. It turned collagen into a billion dollar industry category MCT into a billion dollar industry category and functional coffee into only a \$500 billion industry category by doing it better. So all the people who help me learn how to do this, I'm bringing them together to teach entrepreneurs for three days. I just want more biohacking companies doing stuff that works instead of stuff that's easy to sell and cheap. Hallelujah. Yeah, business of hacking.com. And I can't wait to see you there and I'll make sure I have Hi seeded grass fed something for you.

Dr. Stephanie Venn-Watson (00:45:37):

That'll be the next thing. Yeah. We want companies to be able to dairy companies to report the C 15 levels in there, their food. And so that way that can drive demand for using the absolute best feed for these animals and people will respond so we can create the market for it if people will choose the product that has the highest C 15 in it. So a good thing to encourage.

Dave Asprey (00:46:04):

Can we get a little bit nerdy on some longevity stuff?

Dr. Stephanie Venn-Watson (00:46:07):

Oh yes. Always.

Dave Asprey (00:46:09):

Let's talk about metformin. So back in 2003, a company called Biomarker Pharmaceuticals had the first research showing that metformin a common diabetes drug that we now sometimes and maybe mistakenly used in the longevity world, that it caused the same genetic expression changes as fasting. So given that I lived in Palo Alto and I ran a longevity nonprofit group, I was like, I got to meet these guys. So I found their offices that went in and I met, it was about eight scientists mostly from China. And this was maybe three years after the research came out. And I started on metformin after the first mouse paper because I'm like, why not? Plus say have high blood sugar anyway, I'm fat. So I went in and I said, I'm really interested. What's the company looking like? And maybe there's investments here. And they said, you know of our research. I said, yes, I've been taking metformin ever since. And they looked at each other and they said, can we ask how old you are? And deadpan? I said, I'm 84 years old.

(00:47:16):

These weren't like people who've been in Palo Alto. But very often I think their eyes are like, it works. It works up. Now I'm not just kidding, whatever. I'm 30 something, whatever. But what I noticed from taking metformin is just over time, like a reduction in energy. And then I started seeing evidence of reductions in VO two max reductions of mitochondrial function. And I quit taking it because I don't necessarily think it's good for you. It might be good once or twice a week when you're not exercising because it stops you from benefiting from exercise. I've been one of the early voices saying, I don't think you want to be on metformin all the time. Even if you're good with longevity, you might do it for six months with growth hormone to reverse this or whatever, but it's not a forever longevity drug. Compare fatty 15 to metformin and what it does.

Dr. Stephanie Venn-Watson (00:48:05):

Absolutely. And you hit the nail on the head with regard to metformin. So while metformin activates AMPK, which again the heart of the wall longevity pathway, it's a pathway we want to hit. The way metformin works is by actually decreasing mitochondrial ATP production, hence lower energy production. And it lowers mitochondrial energy production, which then triggers AMPK to ramp up to help make up for what they're seeing is, oh, mitochondria down, we need to kick in this system. So that is why this effect is seen and ends up not being ideal with regard to what you're talking about. Exactly what you felt Dave. Now very different for fatty 15 and for C 15 is that C 15 not only directly activates AMPK, which helps with glucose handling and cellular uptake of glucose, but it actually activates mitochondrial and repairs mitochondrial function. So it has a separate mechanism where a lot of times when we get older, we have this cascade of events of how our mitochondria make ATP when we get older, this part of complex one, the first step is often the part that breaks and that results in decreasing mitochondrial activity.

(00:49:32):

C 15 has a workaround where it actually skips and feeds into the second step and then now wakes up. And it basically allows mitochondria to keep producing ATP. So very different from Metformin with regard to it activates AMPK, but not by breaking an upstream part. It actually feeds and activates mitochondria function. So really important difference. And that's a great question.

Dave Asprey (00:49:57):

Metformin's relatively cheap these days. If you buy a generic thing online from India or something, it's still relatively expensive in the US because for some weird reason, the pharmaceutical industry passed a law that the government can't negotiate with drug companies over prices. I can't imagine why they would do that. But what that means is if you have a budget for longevity, and believe it or not, guys, even I have a budget for longevity, right? There's only three things that matter that you're investing in to live a very long time. And it is number one, how much money are you willing to spend? Even if you're an Elon or someone, you might want to spend a trillion dollars. You don't have a trillion dollars, so you're not going to do it. Number two, how much time do you have? And I have a million dollar bio vacuuming lab downstairs.

(00:50:53):

In fact, we have 30 locations of upgrade labs opening as a franchise. You can go to [ownandupgrade.com](#) and open one in your neighborhood. And I built that because I was spending all my time driving around trying to get access to all these technologies. And what if I stack 'em all together? And what if I only do what works? But even then, how much time do you have? So we have money, we have time, and what no one talks about is suffering. So Stephanie, if I said, if you want to double your lifespan, all you have to do every morning is wake up and punch yourself in the face as hard as you can 10 times, no one's

going to do it. And the people who do do it are going to be social outcasts. They always have black eyes. And so it's those three things.

(00:51:36):

And what I'm zooming in on for people is, okay, how do I minimize the amount of money you spend? How do I minimize the number of seconds you spend and how do I minimize the amount of effort or friction that it takes for you to do it? And when I look at fatty 15, I'm like, it's about 40 bucks a month. If you don't use the Dave discount code, yes, fatty fifteen.com guys. And yes, I actually want you to buy this because it's in your best interests or don't buy it, it's good, whatever. But if you do that, and it takes not very much time to swallow a pill. And if you don't like swallowing pills, they're very tiny pills. In fact, if you made a bigger pill, I would buy that one just if that's so I could get more of it. So there you go.

(00:52:22):

You're like, okay. It was non friction. It was about a buck a day and it had broad effects. And this is different. My friend Brian Johnson, I've interviewed him on stage at the biohacking conference, and I'm not willing to spend eight hours a day on my longevity. And if I did, I'd have to live 30% longer just to get that time back because I'd like to spend that with my teenagers or doing this kind of a thing, just doing stuff. So I just think fatty 15, it's cool and it'll probably pay for itself. I'm not suggesting you go off metformin unless if you're working with a doctor or whatever that's in the us at least your doctor has to somehow be involved in that, although that's not really true. You could just do what you want to do, but that's up to you. So what do you do here?

(00:53:12):

You say, all right, what are the benefits? And there's a lot of benefits across a lot of categories of fatty 15 versus how you might spend 150, 200 bucks a month on some longevity drugs that have similar effects. And then you say, maybe you do both. And if you have the money and you don't mind swallowing a couple extra pills, go for it. Or you say, I'm going to optimize. And at that point, I think Fatty 15 has a pretty good profile here. Well, let me ask you this. Should people take rapamycin and fatty 15, are they going to get added benefits? I know you may not have a study, but let's just talk about reasonable pathways. Just hypothesize with me.

Dr. Stephanie Venn-Watson (00:53:56):

So you're right. There are not studies rapamycin, obviously, it's on the top of almost everybody's lists of the most promising longevity enabling molecule. Rapamycin, as you know, was discovered in Easter Island produced by a bacterium. So it's not something that we were intended to get exposed to for a whole life. It is a very complex molecule. It is not something we would want to make because it's a mess of a molecule. And what comes with that are side effects. And so if you go and you look at the list of potential side effects that rapamycin, no joke, there are over 30. You go to Mayo Clinic and it lists over 30. So from what we have seen with fatty 15, if you are taking rapamycin purely for the longevity standpoint and you're having difficulty with it because of the side effects, then we would encourage you to try fatty 15 and look at, we really encourage, look for clinically relevant benefits.

(00:55:07):

Go get your blood panel done, just your standard blood panel done at the beginning. Take it again at three and six months. And it's not just a hope and pray that you live longer. That fatty 15 is tapping into these longevity pathways that as a jero protector, its intent is to slow the onset of chronic diseases so that we can live longer. So I don't know the answer about putting fatty 15 plus rapamycin, but fatty 15 is a very safe molecule. Nature made it that way from we get it from birth and incredibly potent with regard to its role in serving your longevity. So I would put that at the core of your health stack and then add things on to see how well they work or don't work compared to just what you're getting from that base. Longevity nutrient.

Dave Asprey (00:56:02):

I have a question. You might not

Dr. Stephanie Venn-Watson (00:56:03):

Answer it.

Dave Asprey (00:56:05):

Is it possible that taking four or five fatty fifteens per day could make someone very lean? Very lean?

Dr. Stephanie Venn-Watson (00:56:15):

Okay. I'm going to answer this question carefully. So when we talk about the dosing of fatty 15, always recommend that people start with 100 milligrams, like one capsule a day. Do that for three months, see how you respond to it. And if you're seeing or feeling benefits, now that we have the test, that's even better. You can see of where did I start and where do I need to get to. I think that if there are people who are highly deficient that taking more fatty 15 could be beneficial in getting you caught up. But right now, we really don't recommend we say one to two capsules per day. There have not been any safety issues with fatty 15, with the pure C 15 that we've seen. We've done extensive safety studies and we haven't seen an upper limit. But everything has an upper limit. Water has an upper limit. Exactly. So taking more, I think it's people need to carefully watch their journey. If you're going over three capsules a day, then do this with your physician.

Dave Asprey (00:57:26):

Hold on. You can even spell fatty 15.

Dr. Stephanie Venn-Watson (00:57:32):

Yeah, I know. It's really funny. The physicians are coming to us and saying, what is this? Because I'm seeing patients who have had condition X, Y, or Z for forever, and they're being helped by this. Help. Explain to me why this would make sense. So we have a lot of physicians now that are on board, but so with regard to weight loss and being thin, it does activate PR alpha delta, which is a fat burner mechanism. But to date, we do not really put this forward as a weight loss supplement. We think it helped to be part of a healthy regimen, but would not take it primarily to lose weight.

Dave Asprey (00:58:22):

And you can say, Dave, why would I not like your question? Here's my dilemma, using just the nutritional stuff that I do and all the supplements and things like that. I went from being 300 pound obese person to getting down to about 6% body fat without trying, I'm never hungry. And I mean, if you look, yes, I'm flexing right now, but the amount of definition on my caffeine tattoo on my Bice beer. It's stupid. There's all these weird, it's crazy. I have the abdominal veins. I have stretch marks also from when I was fat. I'm the least likely person from a genetic thing for my whole family. They're all pretty darn pudgy. What happened? Well, I know I did this nutritionally and in the last, after I was at 6% actually, I said, now I'm going to take some fatty 15. Your evidence is very strong.

(00:59:16):

And now I'm at 4.8% body fat according to my loss. Now you can get too low body fat. In fact, one of my problems is I used to weigh 300 pounds. I have lots of skin. So people are like, you look old. I'm like, I kind of do because look, I have extra skin. You look at my old pictures, I was fat in my face too. So I'm actually interested in having more subcutaneous fat and I'm wondering, maybe I should just back off to one fatty 15. Do you think that it might've driven that fat loss? I mean, I look like I have been prepping

for a contest all the time without any effort, which is so cool. Except if I'm like, I want my face to be a bit pier, right?

Dr. Stephanie Venn-Watson (00:59:57):

Yeah. It shouldn't result in fat loss, but

Dave Asprey (01:00:03):

Well, why not? If you fix mitochondria A MPK.

Dr. Stephanie Venn-Watson (01:00:07):

Yeah. Yes. Yeah, you're right. It

Dave Asprey (01:00:09):

Inhibits. It does all of these longevity things that drive fat loss.

Dr. Stephanie Venn-Watson (01:00:14):

You're right. You're right. You're right. So yes, so in that case, and it certainly doesn't hurt Dave because we have a lot of our customers, they experiment because everybody's on their own fatty 15 journey based upon where their bodies are at. You're at a really, really, really healthy state, and so you could then go down and yeah, to one capsule a day and see how that works for you. I mean, the one thing we didn't talk about is we have a study that came out two years ago that we published showing that when we take C 15, our bodies create a second metabolite, that our bodies use C 15 to make a second metabolite called Pentec oil carnitine or PDC. This molecule day fully activates cannabinoid one and two receptors full activate cannabinoid receptors, which is helping to explain for me and for many others, a calmer mood, deeper sleep and less joint pain. People are getting those benefits as low as with one to two capsules a day. So we still need to do more studies on as rigorous as we have on the metabolic and heart and liver health front, but really intriguing with regard to more isn't necessarily better if you're finding your sweet spot, which is why we always say start with one and you may need to pair up for a little bit and then you can again bring it back down because you're in a really good healthy state with it and see how you do.

Dave Asprey (01:01:54):

So cool. It's funny that you brought up the CB one and CB two cannabinoid receptors. I was going to ask you, do you know about Penta decal carnitine? And of course we do. So this is called PDC and guys for mood sleep immune function activating these is important. It's one of the reasons that CBD oil might be important. So you didn't say this, but given that you have 1100 endocannabinoid in the body, and it's different genetically for every person, so you may have to try a hundred types of CBD from different plants extracted in different ways. And yes, I invested in the company a while ago that was trying to unlock all that genetically, or you could maybe take something more broad spectrum that's going to activate those receptors, which would be fatty 15. So that's kind of a cool thing. So maybe if you're looking to economize, you could toss out your CBD,

Dr. Stephanie Venn-Watson (01:02:45):

Right? You can give it a try. I mean, you figure we don't have these receptors for CBD, right? We have these receptors because dogs have the receptors and monkeys have these receptors, and so we have these receptors for us to have something we're attended naturally. And so because this is only the second ever discovered natural endocannabinoid, we are meant to get C 15 in our diet for all the great things we talked about, but also probably to make this metabolite to help with their sleep and mood. So when we talk about



C 15 deficiencies, has that also been driving lower levels of these endocannabinoids that help us with sleep and mood and just being balanced and kind of getting ourselves back, getting the world back onto a healthy track. So it's an exciting place that we're looking doing more studies in.

Dave Asprey ([01:03:40](#)):

If I did have another dog, should I give fatty 15 to my dog?

Dr. Stephanie Venn-Watson ([01:03:44](#)):

Yes. I give fatty 15 to my dog. We actually just got grass generally recognize as safe status for dogs.

Dave Asprey ([01:03:51](#)):

Wow, I did not know this. Literally we did not plan that at all. That's just,

Dr. Stephanie Venn-Watson ([01:03:55](#)):

Yeah, and this just happened. We actually have a press release coming out on it that hadn't yet come out. So you're a mind reader or something. And there's a big conference called SuperZoo where all the most innovative pet products that are coming out, and we partnered with a team called Pat's Best Life, and they're introducing longevity 15 powered by fatty. 15 for dogs will be announced tomorrow.

Dave Asprey ([01:04:21](#)):

And this is important for listeners. There are times when it's legal to make a supplement for dogs that some regulatory authorities feel like they have a right to keep you from buying. So I see a future where many of us will be taking pet supplements because the government made it illegal for you to be healthy, but it's okay for your pet to be healthy. So could you just make one that's not liver flavored so that I could take it and continue? It

Dr. Stephanie Venn-Watson ([01:04:50](#)):

Can do. I think this one has Himalayan cheese in it. So

Dave Asprey ([01:04:53](#)):

Himalayan cheese yak butter dog biscuits. I can't wait. Now there's some other studies and guys, yes, I am kind of helping to sell this because the science is so compelling. This is what I actually do and my whole goal in this show is I just want to have you suffer a lot less and spend a lot less money than I did on my journey. If someone had just told me this when I was 20, oh my God, my life would've been so much easier. Probably the largest number of any compound I've seen for mitochondrial production of a TP of any substance except maybe GW 501516 cardine, which is an unusual longevity compound banned by the world anti-Doping Association. That stuff causes mitochondrial growth. It might be on par with what you've got, but fatty 15 increases a TP production by 350%.

Dr. Stephanie Venn-Watson ([01:05:52](#)):

So this is a study in which C 15 was applied topically to skin and it was for hair growth.

([01:06:03](#)):

And it showed that when C 15 was absorbed by hair follicles, that it's specifically in those hair follicle coals at increased a TP production of mitochondria, which then resulted in hair growth, which is, this is not us. This was another group we then separately, so that's topical, which is different, right, than taking something orally and figuring out what it does in the body. What we published in scientific reports back

in 2020 is that when you expose mitochondria that are impaired to C 15, to our pure founding 15 C 15, that it increased, it repaired mitochondria by 45%, so not that 450% of a direct topical into the hair cells, but for sure increasing a TP production throughout the body in a way of let's fix the mitochondria to be able to get at least eight 45% increase throughout the body. And then this really interesting, right compelling clinical trial that was done for hair growth, which is incredible.

Dave Asprey ([01:07:13](#)):

Wow. Okay. I haven't tried putting a topic. That was my next question for you. Is this available in a topical formulation? It seems like it's a fat and the skin loves fat, and I've put a lot of expensive stuff on my skin now because I've interviewed the people who make it and like, Hey, Dave, have some. I'm like, yes, this is great. So I never used to be, I'm a dude, so I'm like I, I'll take the same soap I wash my butt with and I'll just wash my face and I'm good to go and I'll shave and now I have all the high end stuff and it works for hydration and all and it's always a lipid cream. Do you guys have a fatty 15 facial serum?

Dr. Stephanie Venn-Watson ([01:07:50](#)):

We don't yet. We do. What we do see is that when we take, and I see this myself, we get a lot of this from our customers as well, is by orally taking fatty 15, for example, I had chronic super dry skin, scaly elbows, dry skin on my face, rosacea, even atopic dermatitis like rash, responding to autoimmune issues in my face and fatty 15 fixed all of that. So I should say it's tempered, right? And so I'd say it's 80% control now because of fatty 15. So it's greatly improved my skin health, not topically, but by going in and we know that it gets incorporated into all of ourselves including our skin cells. So that's leveraging that for now.

Dave Asprey ([01:08:44](#)):

I like that answer a lot. It turns out that the stuff you smear on your skin is the frosting on the cake, but the is defective. It's not going to work very well. So I know for a fact from my own experience and just from lots and lots of research, you've got to have healthy lipid metabolism in order to have healthy skin and healthy immune function. And then you can get things in through the skin externally. But that's not where you start. That's where you finish. But I'm actually now tempted to take a fatty 15 capsule. There's no binder in there, right? It's just pure fatty 15.

Dr. Stephanie Venn-Watson ([01:09:18](#)):

Yeah, there's a little bit of vegetable cellulose that's combined with it as a help fill up the capsule, but that's it. Okay,

Dave Asprey ([01:09:25](#)):

So if I was to take that in, spill it into my lotion, what would happen? Is it going to dissolve in or do I need to heat it up first? How stable is it come?

Dr. Stephanie Venn-Watson ([01:09:35](#)):

Goodness. Even if you just took the powder and your skin's warm and you rub, it does get dissolved. Even if you mixed it with an oil, a little bit of an oil or like you said

Dave Asprey ([01:09:50](#)):

MCT, which is a really good solvent.

Dr. Stephanie Venn-Watson ([01:09:52](#)):

Yeah, like CT, then it would dissolve pretty readily in that and you can just rub that into your skin.

Dave Asprey ([01:09:58](#)):

Alright, I'm going to try this and we'll see what happens.

Dr. Stephanie Venn-Watson ([01:10:02](#)):

Yeah, we'll have you report back. You could be our Kate study.

Dave Asprey ([01:10:06](#)):

I've actually had really good results for hair and for listeners, if you go back, I did a whole episode with Dr. Allen Bauman where I had 10,000 hair moved from the sides to the front. You see me at the biohacking conference because I managed to keep my hair longer than any family member I've ever had just with longevity stuff. And somewhere around like 45, it started going back and it started going back because of a testosterone pellet. I got a pellet and my hair started falling out. I'm like, man, I don't like pellets. They don't work for me, but they work really well for others. So I said, I got to fix this and I did. But the deal is you need to stop loss. So I put stuff in my hair that helps mitochondrial function and I'm not even using Rogan or anything like that and I am seeing a difference. Thanks Dr. Allen. So I am going to try adding this to some of the hair stuff and we'll see if that works. And if I look like I'm radically younger in three months, then we're going to have to come out with the Dave effect formula. What do you think?

Dr. Stephanie Venn-Watson ([01:11:02](#)):

I love it. I think that's great. That would be awesome.

Dave Asprey ([01:11:06](#)):

And if I grow a mullet, will my have more C 15 in it? I'm just wondering.

Dr. Stephanie Venn-Watson ([01:11:12](#)):

Of course

Dave Asprey ([01:11:13](#)):

The upgrade collective was like, please don't there a fire in C 15. You see what I did there? I was like the best joke ever.

Dr. Stephanie Venn-Watson ([01:11:21](#)):

You brought it all back, Dave.

Dave Asprey ([01:11:23](#)):

Okay, love it guys. Fatty fifteen.com use code. Dave, we haven't even touched all the benefits. The stuff around PPAR receptors, this is something that's really important for controlling your blood sugar and your metabolism. People have toxic mold. We always have problems with our PPAR receptors and it's why one of the diabetes drugs called PO gazon or actose, it's something that you might take for three or four days to reactivate those receptors or I believe that taking a microdose of that stuff I take about a quarter of a normal dose of actose is probably superior to Metformin for what is going to do for your blood sugar levels and your longevity. Do I have a lot of studies for that? No. Do I understand mechanisms? Yes. Do I want to do anything that suppresses my mitochondrial A TP production? No. And

that's why I met pharma off my list. Fatty 15 is on my list and it has a similar effect to what PO Glitazone does, correct?

Dr. Stephanie Venn-Watson ([01:12:28](#)):

Yeah, that's correct. So its main focus is, so when we talk about PPAR receptors, these are just the known, well-known orchestrators of our metabolism, of our immunity. And as we get older, they stop working as well. And so there are three different types of PPARs, alpha, delta and gamma. And Pioglitazone focuses mainly on the P per gamma. So you're spot on Dave. And so with C 15 it has some gamma activity, but much heavier on the alpha and delta. So by having that combination that allows you to hit all three of these PPAR receptors, which is a pretty nice combination.

Dave Asprey ([01:13:11](#)):

And to nerd out, remember earlier I said GW 501516 also known as cardine, that's A-P-P-A-R gamma activator as well, if I remember right.

Dr. Stephanie Venn-Watson ([01:13:23](#)):

Yeah. Super powerful one. Yeah.

Dave Asprey ([01:13:25](#)):

And if you're saying, Dave, you're spouting these things, you're making me feel crazy here. Just read superhuman. I wrote about this in detail. It's one of the only compounds we know that causes you to grow new mitochondria. And what we're talking about with fatty 15 at least so far is we know it makes your mitochondria work way better. Does it affect mitochondrial biogenesis, the growth of new power plant environmental sensor compute nodes?

Dr. Stephanie Venn-Watson ([01:13:48](#)):

So we don't know. But what we do know is that when we talk about fortosis, right, this new form of cell death, the way that fortosis happens is that we have increased lipid peroxidation because we have weakened cell membranes because of weak fatty acids that leads to lipid oxidation that combines with a strange iron that's showing up in our cells. Iron plus lipid peroxidation leads to reactive oxygen species, like a massive production of reactive oxygen species that then take out our mitochondria. So the big danger and risk of fortosis, how it accelerates aging gets to the point that you're making Dave, which is that if you take out our mitochondria, boy, we're going to age a lot faster, increase our risk of heart disease type two diabetes fatty liver disease. So C fifteen's primary role again preventing this C 15 deficiency syndrome that causes for ptosis, it's protecting the mitochondria from basically being taken out through this new cell killer. So what we don't know is does it help make more mitochondria. Studies aren't done yet. So still a question on the table,

Dave Asprey ([01:15:00](#)):

It would not surprise me just biologically, if your mitochondria are maxed out in their production of a TP because they're working right, and there is additional demand logic dictates that Mother nature would say, oh, there's additional demand. Let's make some more mitochondria. Right? Yeah,

Dr. Stephanie Venn-Watson ([01:15:16](#)):

It makes a lot of sense.

Dave Asprey ([01:15:17](#)):

Yeah, exercise will drive a little bit of mitochondrial biogenesis, but we want to make it really easy. So we also know that making a new mitochondria takes a lot of a TP. So if you up-regulate your A TP so you have more energy, is it easier for your body to make new mitochondria? It is. It doesn't mean it is going to happen, but it means you've set the stage for the body to do what it's supposed to do if things are working the way it could.

Dr. Stephanie Venn-Watson ([01:15:39](#)):

Absolutely. And let's keep all of those wonderful mitochondria we have. Let's keep them in tip top shape for as long as possible is a really good way to describe what we know about fatty 50 today.

Dave Asprey ([01:15:53](#)):

Okay, two more areas of interest and then we're going to come to the end of the interview here just for time sleep. Fatty 15 is sleep. What do we know?

Dr. Stephanie Venn-Watson ([01:16:02](#)):

So we were not expecting fatty 15 to have any effect in sleep. And so when we started getting fatty 15 out to the world, all of a sudden I wasn't mom roaming the hallways between two and four in the morning, which becoming my behavior. And I realized I was sleeping through the night through the whole night and we started having more and more customers coming back with these same results in which these were the most enthusiastic near term results of fatty 15. We thought, gosh, is this placebo and what's going on? And then that's when Dave, we discovered this endocannabinoid that it makes pen decal carnitine, PDC by activating CB one and CB two receptors we're like, ah. So this is likely, this is a mechanism that will help with improving sleep activating PAR alpha will also help with deeper sleep. So we have a mechanism and we have anecdotal evidence, and so we're still looking to be able to do the controlled studies to really, really see at what extent does it have this effect. But a lot of people reporting it's a favorite benefit of fatty 15 that we weren't even expecting.

Dave Asprey ([01:17:26](#)):

Wow. If you want to take it to improve sleep and you only take one per day, I think most people listening are going to take one in the morning, one at night, but should you take it in the morning or at night?

Dr. Stephanie Venn-Watson ([01:17:37](#)):

For me, I personally, I take two and I take them in the morning. I do know people that do exactly what you said, one in the morning and one at night. And they say that helps them with their

Dave Asprey ([01:17:48](#)):

Okay, libido, any effects,

Dr. Stephanie Venn-Watson ([01:17:50](#)):

None that we know of. But if you talk about all the things that it does with regard to its role and basically helping to make us our mood better to decrease anxiety again through these endocannabinoid receptors that we feel healthier, that we aren't, it's decreasing the burden of the onset of these chronic conditions. A big thing that harms libido are all of these things that happen as we degrade, as we age. So it's more like part of the package of as we degrade with aging, but do we have no studies have been done to say, Hey, does it directly target these receptors to increase testosterone or estrogen? And that those studies have not been done.

Dave Asprey ([01:18:39](#)):

Okay. I do know that having adequate mitochondrial energy, in other words, your cells are better making energy, you kind of need that for everything to work. But for people who are dealing with libido issues, step one, fix your mitochondria because mitochondria makes sex hormones, they make testosterone people. Well, isn't that what your gonads do? Yes. And if they're made throughout the body, so you're going to see improvements there likely, but you might need to get your testosterone and thyroid levels fixed. You might need to work on nitric oxide. And all of those would work in synergy with fatty 15 because setting the stage for adequate mitochondria will affect all seven of the big pillars of aging from superhuman. So I am very intrigued with this and like I said, I've been using it for 18 months, two years, something like that. And I used it because of the research and then this just is a culmination of me going, this stuff is legit and 50 50 studies, and it's only 10 years ago that we discovered this.

[\(01:19:40\)](#):

If we went back 50 years, you would've had to wait till you were dead for this to become a part of our knowledge, the speed of adoption of new compounds for longevity and human health, it's so cool. And you've done the real serious research, like I said, about \$10 million of research for it, plus the work of turning into a product and kudos for the way you've got it packaged to, you're even doing glass bottles with little aluminum packets and stuff like that, which is very, very difficult to do for supplements, but it's cool. And final question, is this stuff heat and light stable?

Dr. Stephanie Venn-Watson ([01:20:19](#)):

It's a great question. It is incredibly stable. So one of its right, it's ability to stabilize our cell membranes translates to in the bottle very different than what we're used to with omega threes and omega sixes with those oils that are highly susceptible. This is a very stable molecule. It melts at 125 degrees Fahrenheit, but even if it melts we talked about earlier, I melted in my copy, it still has the same structure and is for me, maybe it's more bioavailable, I don't know. So it's highly stable can be kept at room temperature, no smell, no taste. Over 98% of our customers have made fatty 15 part of their daily routine for all the things we did. Small pill, easy to take, it's shelf stable and you feel better about half of our customers feel better within two weeks. So it's like all good.

Dave Asprey ([01:21:17](#)):

What about the fish burps? I don't get to have those with fatty 15.

Dr. Stephanie Venn-Watson ([01:21:21](#)):

No, sorry. I mean if you love fish burps, fatty 15 is not for you. No fish burps.

Dave Asprey ([01:21:27](#)):

This is also going out on a limb, and I hope this is interesting for all of our listeners, I think it might be, I couldn't figure out why blending butter and MCT and coffee worked, but eating them, it doesn't work. And then drinking the coffee. And I funded research at the University of Washington, Dr. Gerald Pollock's lab, and he looks at the change in the structure of water, basically how gel-like the water is, so how much viscosity it has. And he found that there were two fats that made water into what he calls exclusion zone water very effectively. In fact, the most effective he'd ever seen it was butter and MCT oil. So the reason that Tibetans mix the butter into the tea is because they're changing the structure of the water using fat. And that's why if you blend your danger coffee with butter and MCTE, you get results that are different than eating them and drinking it.

[\(01:22:24\)](#):

So it follows that putting your fatty 15 in coffee probably affects the water structure itself. And if someone here is listening going, there's no such thing, guys, you can see exclusion zone water on a microscope. This isn't one of those. I bless the water. And it changed the snowflake structure, which is probably real too. But this is actually a hard science from the University of Washington and 40 years of research into how water works in cell metabolism with cell membranes, which is what we're talking about here. So I think there's probably an argument that says put it in and blend it unless it sticks to the side of your cup and they don't get it, that would suck. So maybe MCT when you do it and everyone's good to go.

Dr. Stephanie Venn-Watson ([01:23:05](#)):

Yeah, I love it. Yeah, if it has an oil to be able to cling to, that'll work. And then for me, just my coffee's got to be super duper hot. And by having it hot, it melts in there and yeah, it's how I take my batted 15.

Dave Asprey ([01:23:18](#)):

Sweet. Thank you. This is such a fun interview. I think we should be friends because you like high altitude, grass fed sheep products and very few scientists have the way of thinking about this. You went from dolphins to massive longevity drug in 10 years or not. Sorry, massive longevity supplement. We don't want longevity drugs. That just means regulation. So nice work and thank you and thanks for sharing this. It's important,

Dr. Stephanie Venn-Watson ([01:23:43](#)):

Dave. We're already friends and thanks for being part of the movement. We really, really, really appreciate it. And thanks for the fun conversation.

Dave Asprey ([01:23:52](#)):

You got it. And if you liked this interview, I would love it if you shared it with a friend. There's so much longevity knowledge on the human upgrade where people who are really into living a very, very long time, they need to be listening. And we have millions of listeners. In fact, the show has consumed today 792 lifetimes in 500 million downloads of the show. I did the math. So if this show is extending life and it's worth your time, then I've done something really good. And if I'm wasting your time, that makes me a mass murderer. So please help me know that I'm not a mass murderer by sharing worthy episodes with friends. You have someone who's dealing with any of the stuff we talked about, high blood sugar, aging, bad skin. Dude, this is 40 bucks a month. It's like a very broad spectrum thing. We should all know about it. And the code is Dave on fatty fifteen.com. And thanks again for your support and your listenership. You are listening to the Human Upgrade with Dave Asprey.