Unlock The Benefits Of Pentadecanoic Acid (C15) Transcript

(Transcripts are generated by AI and may contain errors)

Introduction to Dr. Stephanie Venn-Watson

Again, welcome to the MS and Neuroimmune Summit. I'm so excited to have my next guest. Dr. Stephanie Venn-Watson. Now she is the CEO of Seraphina Therapeutics.

She's a veterinary epidemiologist and a public health scientist. Now, Stephanie previously served at the World Health Organization in the US Navy. She has a lifelong mission of helping people and our fellow animals.

and, I am a farm kid. I have, always had, dogs, in our household. So. Yes. I to share a love, for animal companions. she wants to help all of us age better.

she has award winning approach to improving human and animal health, and has been featured on many, organizations, including the National Geographic in her time.

as CEO, Seraphina Therapeutics has been recognized for its extensive research on this wonderful compound and, pentadecanoic acid (C15:0). So did I miss anything in your bio that we should highlight?

Oh, no. Dr. Wahls. It's great to be here. I think I everyone's probably be even more excited to hear about the science behind C15 Thank you for that introduction.

Yeah. Now let's talk about, C15. In the medical world, saturated fat has really been blasted as this terrible, terrible, compound that's destroying our health.

if I remember correctly, C15 is a saturated fat, so help us understand what this is and why it's helpful and not harmful. Right. So it was a big surprise.

Dr.

What C15 Is and Why It Matters

Wahls, you know, that have C15, as you mentioned, is this odd chain saturated fatty acid emerge as not only not bad for us, but and being better showing that it's beneficial.

but as we published in Scientific Reports in 2020 that it's meeting these rare criteria of being the first essential fatty acid to be discovered in over 90 years since omega three.

Okay. So, let's define the term essential because I think our listeners may not know what that means. Absolutely. So essential fatty acids are these are nutrients that our bodies must have certain levels of in order to maintain our baseline physiological health.

But this is important part. Our bodies don't make enough of it. So that means, Terry, that we have to get enough of these essential fatty acids through our diet in order to maintain these healthy levels.

And so before our discovery of C15, there were only two known essential fatty acid. One is an omega three and another is an omega six. And again, no fats, particularly omega three, Omega six and now C15 are probably really important to cell membranes and cell membranes for that for everyone who's listening.

That's a critical part of the myelin that, wraps around all of our nerve cells. And the myelin is part of what's being destroyed. If you have multiple sclerosis or a neuro immune condition.

So what are the C15 do that is, supportive or health supportive? Right. So, you know, as an essential fatty acid,

we're really learning more and more every month that goes by since that initial discovery.

And it's because, Terry, that it's not just our team that's working on the science for 2015. The world has now turned its attention to C15 So we now know, you know, that C15 is truly an essential fatty acid, especially as it comes to healthy aging.

And one of the primary ways that helps with healthy aging. Exactly what you just said, which is it plays a role and a really important role in our cell membranes.

which means it's it's a sturdy fat that helps stabilize. It's more resilient against things like oxidative damage. It's called lipid oxidation. and it helps protect ourselves, including our myelin against this attack by oxygen. That then leads to these oxidative radicals that lead to multiple chronic diseases.

So that's one primary role. But in addition, we know now that C15 helps repair mitochondrial function. It helps with, important cellular signaling, including things that help balance our metabolism and our immunity.

It is anti-inflammatory. So some of the signals it supports are things like decreasing Jak stat and decreasing these pro-inflammatory cytokines. So long story short, all told to date.

And again it's increasing every six months or so. We now know that C15 targets six out of 12 of these hallmarks of aging that define how we age at the cellular level.

Okay, I think that's really important.

C15, Healthy Aging, and Disease Risk

we we know that I said, beginning around age 40, aging is beginning to happen that I can't repair as well. There's plenty of evidence on a on a molecular basis that aging happens, much more rapidly.

You know, if you get to 50, it's, or fast, 55 fast or, you know, I'm past 65 now, so you know, it really is accelerated. and there are things that we can do to slow that down.

and I think I just heard you tell me that C15 gets, six of the 12 biomarkers that we know are part of that accelerated aging. That's correct. And what's nice is it's not only preventing these hallmarks of aging, these aging driving mechanisms, that, you know, in the lab, it's showing that it's reversing these cellular effects.

And that helps explain why people who have higher C15 levels and really big, population cohort studies where they track people, prospective cohorts where they track tens of thousands of people over decades, showing that people who have higher C15 levels have a lower risk of getting things like type two diabetes, heart disease, fatty liver disease, and even some types of cancer.

So before that, research supported an association between C15 and healthy aging, and now we're showing the mechanisms behind how it actively causes that benefit.

So now you have me really curious, do we have you guys done intervention studies where we give people a C15 and then we measure those biomarkers before and after the intervention.

Those are just starting. So there are two clinical trials, and actually three clinical trials that have happened. They were not targeting that these specific hallmarks of aging, really the physicians leading the studies were very eager to get to the chase, targeting specific diseases, that represent accelerated aging.

so, the first two clinical trials focused on fatty liver disease, which is now present in, right, 1 in 3 people globally. It came out of nowhere, you know, in the 1980s.

And now 1 in 3 people, it's proposed, to be a disease of accelerated aging, which is really interesting. So, the first

clinical trial was done in Singapore, and people, women, with fatty liver disease were given, C15 supplementation.

And it showed numerous benefits, including lower LDL cholesterol, shared benefits with, a mediterranean diet, which included lower liver fat and lost body weight.

And, it improved the gut microbiome, which included, improved growth of this good gut by bacteria called Bifidobacterium adolescentes, which is, interestingly, a long devotee microbe.

Yeah. So, you know, evidence direct, in a controlled clinical trial showing that C15, confers these benefits. Now, again, for everyone who's listening, I have advised and I think there's more awareness that multiple sclerosis is a disease of accelerated aging, that, it's a progressive disease.

We have, many markers that indicate we have more rapid aging. and those, people who adopt, you know, a mediterranean diet, adopt a paleo diet. We slow that, aging acceleration.

and so, listening, I want you to know that, yes, you have accelerated aging, but yes, there are things that we can do. Now, I'm really curious how how did how did C15 get discovered?

Right. It was it was an accident. So we discovered it. as you mentioned, Terry, I'm a veterinary epidemiologist. previously I was working, at the CDC and the World Health Organization focusing on infectious diseases.

but then about 20 years ago, I was recruited by the Navy to help lead a clinical research program to continually improve the health and welfare of aging Navy dolphins, which was, you know, a complete surprise, that I was going to be working with that group.

Clinical Trials and the Discovery Story

I thought I'd be there for a little while. the Navy dolphins live in the open ocean in San Diego Bay. They go out every day. Every day they choose to come back.

and importantly, because they get such good care, they live more than 50% longer than dolphins in the wild. So I was brought in, in part because they were having because this program has been around for over 60 years.

They had this growing population of older, aging navy dolphins, and they wanted to better understand how to continually improve the health and welfare of older dolphins.

So going through that process, we found that dolphins age a lot like us. They get chronic inflammation. They get, fatty liver disease, the high cholesterol, even the full suite of changes, consistent with Alzheimer's.

So knowing that we and also understanding that some dolphins aged healthier than other dolphins, we then did this advanced technology use, this advanced technology called metabolomics.

And we looked at thousands of small molecules in the dolphins all fish diet and their blood. And we found which small molecules predicted the healthiest aging dolphins.

And right there at the top was see 15. Wow. Wow. Okay. So now now I'm really curious. So in the human diet, where does C15 come with, how do we find it?

It's a great question because, you know, the dolphins are getting C15 from certain types of fish, but for the most part, C15 is concentrated in the skin and the heads of fish, which is what we don't eat.

And we also don't eat fish all day. So we don't really get the dose that we need. So our primary source of C15 by far is dairy fat. It's milk fat from cows.

and you know, as you know, a lot of, the intake because of this. Yeah. In 1977, when congressional

recommendations came out to decrease saturated fats, which you mentioned at the top of our, you know, in our interview that included taking out these healthy chain saturated fats out of our diet because the recommendation one of the top recommendations was stop drinking whole fat and I'll just.

Drink skim milk. Yeah. And so it took. So we now know that there are population wide decreases in C15 because of this dietary changes. And we've had a 40 year experiment of taking C15 out of our diet.

And we also now know that as we get older, our C15 levels go down. Now, now I'm really curious. We used to use tallow. You know, tallow was what was the fat used in Oreos for a long time.

And then they switched that out. so tallow and lard, duck fat, chicken fat, these were all the things that were, were used. were those be sources of C15.

Basically. And it's their lard is is high in C15, specifically lard that comes from a category called ruminants. So it'll be cows, goats and sheep. have are the producers of C15 that then gets translated into their milk.

and so for, for, for those people who are not consuming a lot of dairy, because we know that many of us with mass and or immune conditions have gluten sensitivity, which cross reacts to make mercury with dairy.

So we end up taking dairy out. If I have dairy, my trigeminal neuralgia turns on and I have, you know, just horrific levels of pain. So it's been no oh, almost 20 years since I've had dairy because I, I, I have a terrible adverse reaction and. Yeah.

So what am I options. Right. So 15 so in part because of us because we do have large populations who can't, get dairy. and it you know, the science wasn't all wrong.

There are pro-inflammatory saturated fats and their present at much higher levels. So if you look at milk fat, 1% of milk fat is C15, more than 40% of milk fat are these pro-inflammatory, even chain saturated fats like B6 16 to 18.

So even for people who can drink, milk, this really didn't seem like the right solution. and that's backed by studies showing that if you just eat more dairy products, that doesn't confer the same benefits as pure C15.

So we worked with the Navy dairy to say, how can we solve for this? And that's when we said, let's develop, a pure vegan friendly C15, a bioavailable C 15 ingredient that can be used as a supplement, but also as a way to fortify foods and at higher doses, potentially as a prescription therapeutic down the road.

So, let me clarify. What's a vegan friendly? So for people who are spiritually, vegan, vegetarian, they could take this supplement, and use that. so it might like taking a tablespoon of this every day.

it's, what's what's the what's the plan here? It's just a little. So we've, we've what we've learned. It's been very consistent in the science, which is we have created what appears to be C15 nutritional deficiencies because of the things we just talked about.

And so the good news is, is that to be able to get that back into our bodies, without these competing pro-inflammatory fats, all we need on average is between, you know, 1 to 200mg of pure C15 a day.

We have and they're these tiny capsules because I'm not a huge fan of like, I don't like swallowing big pills. You know, it. Can be hard. For a lot of people.

And so just a really tiny pill and all that's in the supplement called fat RC 15 supplement called fatty 15 is pure C 15. There are no fillers, no additives.

It's just C 15 and it's in a clear capsule. So you can actually see what you're getting. So that small amount of 100mg, is multiple. Clinical trials have now shown that that increase our blood levels.

For every 100mg we take, it increases it by ten micromolar our level that we need to stay optimal. now shown across multiple studies is about 20 micromolar.

So we came up with that 100mg dose because nobody's sitting on zero c 15. We're all getting some because it's present in some fish. So a lot of people may have around ten micromolar.

So we always tell people start with that 100mg dose and see where that gets you. Because it probably gets you to at least that minimal level.

Dietary Sources, Deficiency, and Supplement Dosing

And now that's the next really interesting question is, so how do how do the listeners get their C 15 levels checked. Yeah. So there is there's now a test.

it's started to be included in fatty 15. I'm sorry, in, fatty acid panels. so you might be able to go back and see, like if fatty acid panels were ordered, it would include C 15 that we're working with.

Genova Diagnostics and they are, within the coming weeks, we'll be releasing a pure, blood spot test for c 15, that people can do from home. Oh, that'll be excellent.

That will be excellent. and I look forward to hearing from you when that's available, because that will be, super, super helpful. So I could check my level, begin the fatty 15, and then would I check it the next week, or how long should I give it to know that, it's time to recheck?

Yeah, I probably you probably want to give it a month, time. And, you know, there's something that happened that was a delight and surprise and relevant, to to your audience.

Right. For people with Ms.. Which is something that the Dolphins couldn't tell us. And we found that when people started taking fatty 15 within two weeks, they started feeling less pain, getting better sleep, lower stress.

And we thought, what is happening here? Like what's going on? Long story short, we, as we continue to dive in the science, we discover that our bodies take C 15 to make a second molecule called a metabolite.

It's a C 15 metabolite. This metabolite is for the short name is PDC. And as we published in Scientific Reports, this is the second ever discovered full acting endocannabinoid.

So it fully activates CB1 and CB2, which provides as you know, Terrie like provides all these wonderful benefits, especially for people with Ms.. And so I'm going.

To stop you for a moment and tell our audience what endocannabinoids are, and relate that back. Perfect. so yeah. So endocannabinoids, if you know, probably most people recognize the word cannabis, right.

And that is, the plant marijuana. But marijuana. Thank you. And so we have receptors throughout our body called cannabinoid receptors because those are the receptors that respond to marijuana.

But we don't have those receptors in our brain and body for marijuana. Right. We didn't evolve over millions of years just for that. So the big question really, up until the 1980s is what are those receptors therefore?

So, we now have discovered that there are molecules our body makes. These are called endocannabinoids. And that means that our body makes these molecules.

These are the molecules we were meant to have to help us do the things that, you know, are associated with, the good things associate with marijuana of just calmer mood, better sleep.

I mean, even improved cognition. That brain fog, right, can help, get cleared up. And that's what we're seeing with a

lot of our customers, and likely due primarily due to this, endocannabinoid, which is now known as the endocannabinoid system, is now being recognized as the ultimate body and mind balancer function.

that, you know, it is fun to look at the mechanisms of how, very supplements, food changes, are talking to our brain and our nervous system. It is amazing.

So again, I'm sure if thinking about this, it was the milk that we're consuming. But of course, not all societies consumed milk. so it was probably the saturated fat in the animal fats.

I think I heard, lard. probably, beef tallow would work, and, lamb fat, that would work as well. And fat is, super delicious to cook with. how about duck fat?

chicken fat? Was there any C15, in or much? Is it just really small? Yeah, really not meaningful. You know, when you already talk about the these fats, the even the, you know, the beef tallow, those abs still only representing about 1% of the fat.

and that's high, right, for the food, all the, so once you get to the chicken and, ducks, it's, it's becomes negligible. Oh, that's too bad. I really like chicken fat and duck fat. It's very tasty.

I was hoping you were going to tell me that they were good. Just because I like cooking with them so much. Okay, I'll have to look for other, health benefits.

So as I'm looking at, the young children today, there's not a lot of whole milk that, our kids are having. Maybe if they're having, yogurts that there might be a little more whole fat, cheeses.

Some of the cheeses might be whole fat. Right. would that then be a source of the C15? Yeah, it can be. Absolutely. And and, you know, Terry, what you're getting to is it's a really good point, which is kids are kids are getting less C15 than, than their parents, which is like maybe our kids.

So, so it's, it's becoming, kind of a snowball effect where if mom has less C15 in her body, she passes less C15 onto her infant, and then that infant is decreasingly getting full fat milk.

So yeah, we are seeing this. The big question that we're asking, and the hypothesis is that as these nutritional deficient C15 deficiencies aren't just in the middle of our life, when, you know, we were told to stop drinking whole fat milk that starts at birth with these last few generations, that is that part of the problem causing the rise in, type two diabetes, heart disease, fatty liver disease and certain types of cancers among younger people.

And possibly also the rise of the mental health problem we see, in our children the anxiety, the depression, the learning disabilities, the rage, the difficulty with impulse control.

and so, it certainly can help explain that. and of course, it's multifactorial. what's a very complex environment? So there are many, many factors. you know, when I think about the mothers, whose bodies, are being used to build the new infant, and if she's, she's probably losing her C15 stores, because they're going to a new infant.

that may be, adding some more strain now for for our Ms.. audience who may who likely are C15 deficient. Would it make sense for them to sort of do a double dose the first month and then get back to the regular dosing?

It might be we're you know, we're just diving in now to do more, than a little trial specific to dosing, and so and have will be really helpful, with regard to understanding what your level is, and where you're at, you know, it might depend on different things.

One might, you know, if if cost is an issue, then we as a concern, we recommend people start with one because we see a lot of people benefit just from taking that one a day.

But if it doesn't help, then over like a three month period, then we recommend to try. They can try to bump up to

two and see if that helps. And the office over a certain period time, like you say, you kind of get that low to get up to where you need to be.

And then again, being able to use this test to guide so you aren't taking more C15 than you have to, it's it's not dangerous. It's just why take more if you don't need it?

Testing C15 Levels and Target Ranges

If you don't need it? Yeah, that's to help guide the best dosing for people as they're on their fatty 15 journey. You know I think that would make sense.

and so a single dose, now, if I know that my close to a sort of high my, my primary care doc is worried that my cholesterol is is higher than what they would like, and they're trying to convince me to take a statin.

And so far, I'm saying no, no, no, I'm not going to a statin, work my diet. Does that give any caution to taking the C15 if someone has a higher cholesterol?

Or we can just comfortably say, don't worry about it. Go ahead and take the C 15. We can definitely say that the science strongly supports that. C 15 not only isn't bad for your cholesterol, it's good.

So that clinical trial from Singapore, you know, one of the key findings is that C that AMC 15 supplementation actually lowered, LDL cholesterol. And so, you know, it's again, it's I think what's important is when people go on it, that they, you know, work with their physician and they monitor it. But, we also get a lot of our customers coming in, and saying, oh, my gosh, I went to my doctor.

My cholesterol is lower. Is better ever made. And they're asking, what am I doing? So but, you know, we need the more clinical trials. But the fact that a double blinded, controlled clinical trial showed it lowered, lowered, LDL cholesterol.

Really encouraging. Well, I get to everyone. You know, I've, I've added c 15 to my regimen and my lipids, you know, are looking really, really great. and so yes, my LDL, which was good is even better.

And my HDL, you know, before I got tuned in, when I was still doing a low saturated fat diet, sort of the swank diet, my HDL was terrible. It was in the 20s, and, you know, very frustrated.

So keep going lower and lower. Lower. my fat, when I went paleo, in my HDL, improved. And now my HDL is in really great shape. and, you know, since adding the C 15, my, lipids are looking, even better.

Amazing. So that. Yeah. Yeah. So that that is, really very nice. now for the, young children, I'm thinking that some folks can tolerate sheep milk goats milk.

and what what I pursue, I commend, if you elect to test, can you tolerate goat or sheep milk? Start first with cheese. and yogurts because the something that the fermentation process seems to, change the shape of the protein, it makes it less, reactive.

Now, in my case, it didn't work. Neither one of those, I can't tolerate them, so I, have to avoid dairy. Very, very, particularly, we're all unique. We're all different.

So you're welcome to experiment, but pay attention to how you're responding. so you can note that this is working for you or it's not working for you.

Again, there'll be a test that's going to be available. You could test where you're at now, or whenever it becomes available. What what is the target range that we should have for our C 15 levels?

so it's, a minimum of 0.2% is the way that the Genova diagnostic panel is, measures it's a percent of total fatty

acids. They're also going to be, coming out, Terry, with, actual measurement.

So what's the actual concentration? Oh, okay. Upon our request, because we're like, well, relative is helpful, but really, what the studies show is you need a concentration, a minimum of five micrograms per mil, which is what they'll be able to report at, in order to really be above what we believe will be defined as a C 50 nutritional deficiency threshold.

So the goal is to get up above that. And there are multiple benefits, including heart health, that the higher up you go from there, the lower your risk of of things like heart disease.

So you know, as we're talking about this, there's the level that we call, the disease threshold.

C15 vs Omega-3s and Closing Remarks

We'll call that the five micrograms, and so I'm thinking about, diabetes diagnosed at 125. you want, healthy below 100, ideal below 95. and when I talk about A1 C's, 6.5% diabetic health, prediabetes is 6.5.6 and higher.

Healthy is 5.4. I tell my patients ideal is 5.2 or less. So now I'm going to ask, you just told me what the threshold for disease was was five microgram.

I want to be better than I just not having a disease. I want to know what the ideal number is. You know, we're still understanding and it's really depending upon what the benefit is.

And so what we're seeing is, like I said, for heart health and for things like, again, very early studies, just to emphasize for this next point, very early studies, anti-cancer properties.

That's more in the realm of the like, what would be equal to, you know, seven to 8 to 10 micromolar. So it's this range between 5 to 10, and, for heart disease, the more you go up, in that range, the better the long term benefit from association.

And then, you know, for things like me, I was doing great on one, one day, one 100mg, I was getting the sleep benefits, the mood benefits, lower cholesterol, lowest liver enzymes I've ever had.

Those glucose, and so it was working great. you know, menopause kicked in. and so did the joint pain. of you're just aging happening and which I never, you know, had before.

So for that particular reason, Terry, I was like, well, gosh, let me try to, capsules a day just to see, because it does have anti-inflammatory properties.

It has this endocannabinoid that can help with pain. And those two capsules, for me help got completely rid of the joint pain. So I think it depends. And if it wasn't for the joint pain, I would have just stayed on one capsule a day.

So I think it just depends again, what the needs are and the responses that people see. from. I think the message here for one who's listening is to pay deep attention.

Yes to what you're doing, check in with your body, check in with your primary care provider. if you have the ability to follow your levels with the Genova Diagnostics, I'll be coming.

do that. and you can think about, do you have the options of getting some through diet, depending on, what you're doing? I'm thinking lamb fat, would be, perhaps, the thing that, we can try adding to our diet, in if you tolerate it.

goat milk, cheeses, and, sheep cheeses. maybe I will tolerate my my, wife and my daughter love their goat cheese. And I'm glad that they do. And it works out for them.

So, that that is a, another adjunct. You know, we didn't really talk about how C15 is different from, the omega three

and omega six fat, which are also essential fats.

Could you explain that for our audience? Yeah, absolutely. So, C15 while it, you know, fits in this essential fatty acid category along with and omega three and omega six, it's very different than the omegas.

So C15 like we talked about is a saturated fatty acid. And that means that it's a straight, carbon chain. straight chain of 15 carbons with no double bonds.

So a double bond is like a hinge in a molecule. And that gives it an opportunity to bend. But every double bond a molecule has also provides a means for oxygen to attack.

So there's and we talked about this as susceptibility to oxidation. So because C15 is a saturated fat with no a double bond it's super sturdy and resilient resistant against lipid oxidation.

And in the fact like we talked about Terry it's this odd chain. It has all these other benefits we talked about. So polyunsaturated omega three is a polyunsaturated fatty acid.

And it also has anti-inflammatory benefits. It helps our cells be more flexible because of those bonds. But especially as we get older, they become attack points, these double bonds.

So they kind of think of them as a yin and yang in your cell membrane. And once we, found that C15 essential fatty acid, we then actually tested it had to had against pure EPA and omega three, using this system called bio map.

And it tests, these molecules against a bunch of different, disease states of cell systems mimicking various disease states. And what we showed was that C15 had, had 36 clinically relevant cellular benefits, which was three times more than omega three.

so, you know, it may end up that especially as we age at, say, 15 is the essential, essential fatty acid, but it's really about finding the right, balance and really getting your omega threes because they're so fragile.

Getting those from fish. in your diet, versus potentially from a supplement just because they, are susceptible to that oxidation. Excellent. Well, this has been wonderful.

I mean, I've really, really enjoyed this. And I'm playing an aging well so we can keep having this wonderful scientific conversations for the next, 60 years, or at least 50, because my goal is 120.

So we'll we'll see. so now, Stephanie, how do people find you? You guys have a website? what can you tell us more? Yeah, absolutely. So you can go to fatty15.com.

And, Terry, for your wonderful audience, we have if they use a code DrTalks, if they want to try a fatty 15, they can get 15% off our 90 day starter kit subscription.

So you again go to fatty15.com. if you choose to order, put in the code, DrTalks and you get an extra 15% off. Okay. and you guys have any social media or anything that way we do.

You can go to Instagram. and we're at, @meetfatty15. on Instagram and Facebook. Yes, we've got it all LinkedIn. Okay. Well, this this has been excellent.

Thank you so much for, talking with me today. was a really enjoyable conversation. Thank you. Terry.