Can Seaweed Protect Your Brain? Exploring The Glycocalyx-Brain Barrier Link Transcript

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Summit Introduction and Guest Welcome

Hello and welcome to another information packed episode of the Reversing Alzheimer's Summit. I am Your Summit co-host, Dr. Kristine Burke, and over the last decade, I've helped many patients reverse their cognitive decline.

And that is why I have co-founded True neuro Brain health software designed around preventing and reversing neurodegeneration to help both patients and practitioners be extraordinarily successful in this work.

In this summit, I'm bringing you interviews and thought leaders who can help you understand the pillars of brain health and the root causes of cognitive decline.

I want you to learn what you need to know to prevent and reverse cognitive decline for yourself and your loved ones, and I am super excited to introduce you today to my friend and colleague Andy Crosby, so that we can explore why vascular health is central to maintaining the blood brain barrier.

But first, let me tell you a little bit about Andy's amazing journey. She has over 30 years of marketing and business development experience working with iconic brands like Nike, Apple, gap, Procter and Gamble, and magazines such as rolling Stone, glamor and Vanity Fair.

In 2010, her personal interests in health and wellness converged with an opportunity to build and lead the first marketing team with the Institute for Functional Medicine, also called IFM.

And she became the driving force behind a 13 fold increase in the number of clinicians trained by IFM and a resulting surge in awareness and demand for functional medicine amongst both patients and practitioners.

Then she went on to run the Strategic Partnerships and Innovation team, working across the ecosystem to create and nurture alliances to further the adoption of functional medicine.

Andy is now currently the president of Cowboy Health Sciences and a founding partner at Ovation Lab. A very warm welcome to you, Andy. Thank you so much for being here.

Thank you. I'm so thrilled to be here. I think we met 13 years ago at the Institute for Functional Medicine. So I'm really proud to be a part of this.

Thank you so much. Yeah, we sure did. We sure did. So how do you go from Nike and Apple and Procter and Gamble to vascular health and the brain? Yeah.

Life is a funny journey I think most people would really recognize we tend to get to our 40s and wonder like, how am I really doing what I want to be doing with my life?

So I felt like I was a really good marketer. But genes just weren't super motivating to me anymore. And, you know, at about that same time, my health started to change.

You know, I was entering perimenopause, lifestyle changes that we all go through as we age.

Andy Crosbyu2019s Career Shift Into Health

And I started just getting really interested in health and really wanting to understand, you know, how my body was working, how it was changing and how to really optimize it.

So I got passionate about health and then realized, gosh, there's this huge opportunity to take what I know about marketing. And, you know, my second half life mission became really elevating, access to functional and integrative medicine, preventative care for people so that, you know, we can live longer, more active and happy lives.

Yeah. That's that's such an amazing journey that that how life gives you all these talents. And then the opportunities change and you get to have an impact in a completely different way than you set out to be.

So I know that you have a family member that's affected by this disease, and that has been part of what's kind of drawn you into the interest between how vascular health and brain health work together.

Do you want to talk a moment about that? Yeah, I think, you know, I'm your typical patient consumer. I think signing up to learn more about this summit, I think I'm going to learn so much.

I'm super excited about for me, you know, as I started to work in the health care industry, I started to get to learn from people like you and many of the other guests that are going to be in this summit and really start to understand more of the role of nutrition and lifestyle and genetics and health care.

And so I just got really interested in what was happening under the hood for myself. And I found myself at one of these conferences trying out, you know, oftentimes, as you know, other devices you can try on yourself, many of which you end up bringing back to your practice.

And one of them was called a carotid intermedia thickness test. And meanwhile, I had been a college athlete. I'd been living the functional medicine lifestyle, like doing all the quote unquote right things.

So I felt like, you know, oh, I'll take this test and I'm going to ace the test. And much to my surprise, I came back from that test with some pretty alarming feedback.

I knew I had a lot of inflammation in my vascular system, my vascular age. I was 52 at the time. My vascular age was 69. I had a couple of plaque areas in the artery that they had done the ultrasound in.

So all of a sudden, you know, with no familial history, I was just shocked that this could happen. And of course, you know, the more I dug into the statistics, the more I realized, like, I'm just the average person, the average person walks through life.

They don't have the opportunity to get these preventative scans. The first time they learn they have an issue is when that issue is really critical. There in a stroke, place or a heart attack place.

And, you know, if not for this opportunity to do this test, I could have very much ended up there. So I really became passionate about like, oh my God, this test costs $100.

Maybe, at local practices and more and more clinicians like yourself. I know you offer this test in your practice, and that's a big part of your vascular care program.

I just became really passionate about everyone, especially every woman I know who's going through menopause, because that is a big risk factor.

Personal Vascular Scan and Blood Vessel Health

Your cardiovascular risk increases so much with that hormonal change. I wanted everyone to really get this, preventative, test done. So we could just see where we all are.

And as I started to look into that, I really started to learn so many interesting, fascinating things about the vascular system that I didn't know. And one of the things that I think is so exciting about this topic is that, we know how important the vascular system is, but it's only been with recent sort of developments and imagery and, and, electron microscopes that we've been able to actually really understand the structure of the vascular system.

And it's bringing some really exciting science to life, not just for cardiovascular care, but also in brain care, which I know we'll talk about here today.

So I started digging into the science, and I just got really passionate about the fact that, wow, this doesn't need to be this way. We actually live in a universe where the therapeutics, the biomarkers, we know so much more about early signs of cardiovascular disease.

It actually is there are things that we can do from a lifestyle food standpoint, dietary supplement standpoint that can really help support our cardiovascular health.

And we can actually really easily change that trajectory. So right now, we live in a universe where the statistics are pretty grim around cardiovascular health.

But I really passionately believe they do not need to be. We now have science that actually could make a huge impact in that. So the rest of my life focus is in bringing that to the universe.

That's amazing. Oh, excuse me, I was just thinking as you were talking, you know, we we hear the words or the term cardiovascular health, cardiovascular disease and tossed around a lot.

And I think that I mean, as practitioners, we're trained to think about that. That means the vascular system everywhere. But I think the average person thinks really kind of about their heart, like that's your cardiovascular system.

And one of the things that you and I have been digging into this past year, really a lot more, is how much the health of the blood vessels impacts the health of the brain.

And we knew this because we know that vascular dementia, dementia related to damaged and disease blood vessels is the second most common cause of dementia after Alzheimer's, which is 70%.

It's the it's the lion's share that that that that the health of the blood vessels also impacts the development of Alzheimer's disease. It's not just confined to vascular dementia, which is really what some of the conventional wisdom has been.

And then that led us to start digging into this connection between the blood brain barrier and what Calvary's research has really focused on, something called the endothelial, like, okay, so maybe we can start to unpack that.

And, and bring together how the vascular tree really is the key to our brain health. Yeah. Yeah. This has been, I think for me just a really exciting nerdy discovery that I, I, I just love talking about it's a mouthful.

The endothelial glycol helix I will just say I call it the EGF as often as, as an abbreviation. So we'll do that here because it is a bit of a mouthful to work with.

So you know, the EGF is this. It's funny, in the last couple of weeks I think we've seen three new papers on, the endothelial glycol helix and its impact on the blood brain barrier.

And one of them was published in the nature paper, and the headline said slime keeps the brain safe. And so this glycol calyx layer is this slimy. It's a micro, thin but slimy layer that lines the inside of our 60,000 miles of blood vessels in our body.

So we used to think of the blood vessel as a is almost like a garden hose, like it was just a hose and things moved through it. And that was the function of the vessel itself.

As we're understanding more about how it works, this little slimy, micro thin layer is actually what we would call a smart barrier. It's kind of the bouncer for the the wall of all of your blood vessels.

It decides what gets through to and passes through the wall of the blood vessel, and what gets blocked from it. So it's really critical in the prevention of plaque, for instance, it's really critical in determining determining what nutrients, you know, get through the vessel system.

So it actually is slimy and yet really intelligent. It's really smart. And that is to me just a fascinating component. It's not just a barrier. It actually selectively decides what moves through and what doesn't move through, which I think is kind of a brilliant, cool thing that your body does.

Yeah, absolutely. It's kind of like the pawns on the chessboard, right? Like it's it's this it's this piece of the puzzle that's superimposed. Well, and one of the, one of the papers that we unpacked in, in the fall was the one looking at how much denser the endothelial like, okay, Alex is in the brain, blood vessels than it is elsewhere in the body, like 2 to 4 times thicker.

So it's even more important in the brain. Yeah, that was really mind blowing for me. I I'm lucky are you know, our chief science officer, Doctor Chen Chen is one of the foremost experts in the glycolic helix layer.

He's been working with these layers, like, okay, like says for the last 20 years. And, he was the first person that came up with a formulation to actually address the health of this layer.

Blood Brain Barrier and the Endothelial Glycocalyx

And so he had been telling me, oh, the the thickness of the like. Okay. Like the importance really changes depending on where the vessel is in the body.

So we know, for instance, capillaries, those really small blood vessels that are usually in the tips of your fingers, like the capillaries have a much denser component like like okay, let's component.

So as you said, it really blew my mind when you brought that paper to us because I think something like 40% of the volume of the vessels that are in the brain are actually the like, okay, looks like that's mind blowing to me.

It is so exciting. Yeah, yeah. Well, then I think maybe if we just back up for a minute to touch on the blood brain barrier, like what it does to the blood brain barrier, unlike other, other places where your blood vessels exist, it's a specialized control mechanism, like a higher level of security.

Basically, it's like airport security. And, you know, everything else is kind of like, you know, your your bridge toll gate, like maybe there's someone there, maybe there isn't.

But boy, at the blood brain barrier, it's really highly regulated. And it is far less likely to allow certain types of molecules to get across. It doesn't let cells get across like it's very, very tightly regulated.

So to learn that this lining component that's really an intelligent liner has such an important role in whether the brain allows somebody to get in or not, because those things that get into the brain are what stimulate the microglia, the immune activated cells in the brain.

And then that creates the inflammation and then that stimulates that amyloid beta and the tau phosphorylation and that whole cascade of what happens in Alzheimer's disease all starts with the integrity of the blood brain barrier, right?

Yeah. So what are some of the things that we commonly come in contact with that damage? The. Yeah. Great question. I think these are kind of the common insults to health in general.

I hate to say it aging itself is a risk factor for vascular health. Aging has an impact on the like. Okay. Like so as I mentioned, the older we get, the more we want to take care of our like, okay.

Like we want our blood vessels to be nice and elastic and pliable and to have a really thick, almost, a foresty

gooey, like, okay, like layer. So aging is a risk factor, inflammation.

And there are all different kinds of inflammation, right? Inflammation brought on by, high blood sugar, high blood sugar, diet, smoking, sedentary lifestyles, hypertension, tension, of course, will have an impact on that that glycolic helix layer.

So you know, the typical insults to health in general. Oxidative stress is another great example of that. We'll break down the glycogen highlights. And as I mentioned it is incredibly fragile.

We have a really cool micro chip test that maybe we'll get to talk about here. That shows actually how easy it is to break down that like okay, let's but conversely and the good news for all of us, it's also easily rebuilt with the right lifestyle food nutrient support.

Yeah. That is a really important part because it's easy to damage it, but it's also relatively easy to repair it. And you and I both had that experience because I had a similar experience when I was 42 and I had my first CMT done.

And, my vascular age came back at 60 and I was like, oh, this test can't be accurate. I'm super healthy person, but you don't know what's lurking in your physiology unless you go looking for that data and you think that you're healthy, but when you really look inside, you can see like, nope, things aren't right and we need to fix this, and this needs to be balanced, and we need to chuck this out of here.

And all of that makes a difference. So those are the types of things that are accumulating to damage the like okay, Alex, what are the things we can do to help support.

It's healing. Yeah, it's a great question. There's so many wonderful, important lifestyle choices that we should be making. We've talked about nutrient so anti-inflammatory diet again really trying to cut out highly processed foods that could be inflammatory to you.

Of course, as you work with functional medicine clinicians or integrative clinicians, you're probably learning what your body responds well to and what it doesn't.

Some people really have issues with dairy. Some people can tolerate dairy. So I think just really getting to know through a simple elimination diet, which doesn't cost any money, it just takes time, you know, and some, some, connection to what's actually happening to your body.

You just really begin to understand what actually, inflamed your body and what actually supports your body. So, nutrients super important. The things that, I think we often hear in our circles, the people that are joining this and listening to this are probably already thinking about things like great sleep hygiene, really monitoring and taking care of their stress levels.

Exposure to toxins can be another thing that really begins to damage that. Like, okay, like so I think, you know, just ensuring that you're moving your body appropriately, some balance of weight training and cardiovascular training, great nutrition and great sleep hygiene.

Just making sure that, your environment that you're living in is healthy is really important. It is really important. And and you guys well Doctor Chen really made quite a discovery some time ago about another food component that can really help to restore the.

What Damages the Glycocalyx and How to Support It

Let's talk about how that discovery came that so you know in my case I was doing all those things and I still something was not working with my like, okay, legs.

Right. So, someone pointed me to a product called arterial, which is made by Calvary, and that's arterial air. TR oh, Sal and I started taking that right after I got that scary CMT.

And, what I found is over time by really, you know, making sure my lifestyle is healthy and working out and taking care of my stress levels hard for us.

We're on the road a lot and we're passionate about what we do, but that's an important component of my sort of healthy lifestyle making sure I have a fun social life.

I'm moving my body, I'm meditating, and I'm taking care of my stress levels. I also started taking arterial and, what we found with this particular product and the reason why I'm working for the company is they Cowboy Health Sciences.

We're just doing really innovative work around finding, therapeutic targets in the body that no one else is really thinking of that have really high impact across the system.

And what Doctor Chen, learned about the like. Okay. Like 20 odd years ago when he started hearing about it, he created this microfluidic chip. And to just simply state it is a chip that you can put human like, okay, like cells on.

And he was able to mimic the pulse of blood flow across these cells so that he could kind of create a, think living. Yeah. Living like okay, a living like a calyx.

And then he could put substances on it and learn what degraded it, and then test different substances to learn what actually rebuilt that, like. Okay, let's layer.

And what we learned is there's a class of marine polysaccharides that are very effective in rebuilding the glycol helix. And in fact, there is one particular seaweed.

It's a green seaweed. It's not important that you remember the name of the green seaweed, but it is monocyte Roma knitted. And it's grown in certain parts of the world, and we harvest them directly from the fisher people in the world.

And then we extract the most from and, we get remnant sulfate. And this particular extraction from the green seaweed proved to be the most effective. And rebuilding that like, okay, like so we broke it down with a sugar substance.

And then we added this extract of the green seaweed. And we found that within 24 hours we could rebuild that lake. Okay, let's take 103.8% of its original state.

So we found really quickly that this, this, seaweed and this extract was very effective. But we also found it was very safe. So the actual final product, our tier SEL includes the core ingredient is the extract from that green seaweed.

And then it's supported by polyphenols from fruits and vegetables which really help with that oxidative stress. And we found that this is just an incredibly safe way of, really supporting the like.

Okay. Like so I think Doctor Joel Kohn, cardiologist calls it a smoothie in a bottle. You can take it with any other sort of pharmaceutical or anything else that you're taking in your world.

It's it's very, very safe and very effective. So, that to me was huge when I started taking that, I found that within two years, my best age went from 69 down to 62.

And I'm now at that place where I'm almost ready to go upside down, vascular age, younger than biological age. And for me, I just think again, as I talk to people about like, you can do this, you can actually do things that have a reverse aging impact on your body.

And that to me is the most exciting thing. Sure. You know, I I'm taking care of myself. I'm making sure that I'm not damaging my like, okay, like says as much as possible, but it really did have an impact on my health trajectory.

And I just, you know, passionately believe that the days of cardiovascular disease being the number one greatest obstacle to longevity should be behind us.

Yeah. And we have so many tools now, not only in this repair arena but in our evaluation machines, in the blood work and the blood biomarkers that we can look at.

And it still boggles my mind that after more than a decade of doing this work and keeping people from having strokes and heart attacks in my practice, that it's still foreign to much of conventional medicine, and that that ship is just very slow to turn, like when medicine gets routed in to a certain way of looking at something or a certain way of doing something, it is darn near impossible to get that to shift.

It's really an amazingly difficult uphill battle. And we see that in cognitive decline reversal. And I have seen that in the preventive cardiology work that I have done as well.

It's it's stunning, really maddeningly long. Yeah. And I think one of the things that I really connect with, with the co-founders of Roy is their commitment to spotting, like I said, these therapeutic targets that are emerging from science and then figuring out how to create a natural solution, we've done it with the nitric oxide product.

Research, Product Development, and Clinical Results

We have a couple of new fun things coming out this year that again, just have massive systemic benefits. And as you said, they probably still are not teaching the endothelial glycolic helix in med school.

It will take a while for it to get there. So even though you and I are seeing these papers come out on a weekly basis about the like, okay, looks and holy Moses, like it has an incredible impact on the blood brain barrier.

And it's all kind of coming out in emerging science. There's a mad and maddeningly long period of time between the publishing of research and it actually getting into the med school.

So, I'm super excited to be a part of a company that's really trying to shorten that gap between innovation and availability to patients. Well, and I have so appreciated the opportunity and working with you to educate other clinicians to teach other doctors and Pas and nurse practitioners about the endothelial glycol calyx and about its role in the blood brain barrier, and try to close that gap by bringing the knowledge directly to them, instead of waiting for it to trickle through the medical education system.

And I use our Tercel HP in my clinical care. As you know, a lot, a lot it really, you know, half of people die from cardiovascular disease. And this is something that we can use to dramatically alter that trajectory.

And we've published some research together on regressing plaque. And like there's just so much behind this. It's not it's not just something that we hope works or something that in theory sounds like it will work.

It's something that we see clinically defined as giving us benefit. And that's really exciting to me. And one of the things I really appreciate about working with you guys is the attention to the science, the attention to trying to find those natural solutions and helping to make things better for people in the quality of their life.

It's really exciting. Yeah, it is. And it's, it's a good place for me to be in my mission because it's, I don't love selling things, ever. But I'm really happy to promote things that I think actually make a big difference.

And I think for us, we've done the clinical testing on our products. We know that they work and that's why it's really important for us that we offer, you know, a money back guarantee.

If in 45 days you just find it isn't working for you, no questions asked, send it back. We'll give you your money back. We know it works. And so I think for us, just in terms of wanting to be good partners to consumers and patients and people that are really actively, you know, trying to, improve or extend their health, it's really important to us that they feel that cowboy is a partner.

Like we've done our due diligence, we've done our testing, we stand behind the products. And if for any reason it isn't working out for you, we're always happy to to make it good.

Yeah, I would add to that, if it's not working out, you're probably not getting the right kind of testing because yeah, I see amazing results from it.

Yeah. So and you know, back to our analogy, neither of us felt poorly when we tested horrendous. So it isn't always about how you feel. How you feel doesn't necessarily tell you how healthy things are working inside your body.

There's there's really a pretty big gap between those things. There's a big time, a big gray zone where you still feel okay, but things are going down inside and your body is compensating for it.

So you don't have any awareness unless you're digging in and looking for those for those questions to be answered. Yeah, that was the part that I think was the real wakeup call for me.

Like, you know, gosh, I, I, I have the capacity to do something about this. I can raise awareness and, and really help people like you. They're doing great, great work bringing this out to the public.

It is really so critical because, you know, I was crushing fitness tests. There was nothing to your point to show that there was an underlying issue here that could have been really problematic.

So I just feel so fortunate, honestly. We just live in a world right now where practices like yours, you know, you can come in and get a basic physical checkup, do a simple it's not expensive to do all of this and to get a really good read on where you are with your vascular health is where is your as well as your heart health and cardiovascular health.

And because the 60,000 miles of blood vessels that we have deliver all the oxygen and nutrients to every organ in the body, it just has systemic benefits.

So when it's working well, it helps the entire body when it's under stress and it's not working as well, it starts to have an impact on every part of your body.

So I would just say, you know, if you're 40 or 50 and you haven't done some of these baseline cardiovascular tests, do yourself a favor and do it because you are in that window of time when you can have a positive impact on the trajectory.

And that, to me is very empowering, very empowering. And another thing is just pay attention to the labs that you're already getting, like your kidney function, your filtration rate, that thing called EGFR.

Your kidneys are balls of blood vessels. And if you're seeing a decline in your kidney function, then you know that your blood vessel health is compromised, even if it doesn't show up anywhere else.

And so that's a readily accessible number, even from a routine physical that you can that you can see what that is and don't accept that it's just higher than 60, because a healthy level is like 90 to 150.

So if they're allowing you to go from 90 or 100 all the way down to 60, like losing more than a third of your kidney function before they're raising any attention to it, that's also a problem you want to be looking at the process before you have the problem.

And that's in vascular health and cognitive health in all of these arenas. That's so very, very important. Yeah. And correct me if I'm wrong, but basic inflammation markers are usually and are in insurance covered blood testing.

Right. Inflammation would be a huge warning sign as well. Yeah. Inflammation that's often measured in regular, routine testing is high CRP.

Testing, Biomarkers, and Where to Learn More

Sometimes that can be normal though, when you have other types of inflammatory problems. So the CRP is made by the liver. So if the blood that the liver is filtering has things in it that trigger that production, then you'll be able to see.

So it's a really good way of seeing kind of that metabolic inflammation in your body. The the food related, the the blood sugar related, those types of things.

It'll also be if there's just an overwhelming inflammatory event in the body, like an infection, then that'll be abnormal. But many times that can be normal.

And there are still lots of problems that we can find with deeper layers of testing. So just because that number is okay doesn't mean that everything is okay.

But if it's abnormal, that's super important because when that HSP is elevated, you have like a three fold increased risk in having a heart attack or stroke.

And then if you combine that with your vascular specific inflammation marker, the LPA la too. If those are both abnormal, you have an 11 fold higher chance of having a heart attack or stroke.

So we have lots of very straightforward, readily available tests that we can do to help us get an understanding of where the health of the system is. Yeah, yeah.

And I think what is really exciting for me is I, you know, I we don't live in a world where discoveries are like, it seems like we've seen it all. We've explored every part of the universe.

So the more we see these images of the glycolic helix layer, which again, like was so difficult to see because you have to stack 1000 of these, like, okay, let's layers on top of each other to have the width of a sheet of paper.

So they are when I say micro thin they are micro thin. So, you know, it's really been the invent of like more, developed microscopes that we've been able to really see and understand what this glycolic helix layer does.

So like I said, three papers in the last week about the glycolic highlights and the blood brain barrier. It's exciting for me to just see that connected to brain health, because going back to my own risk factors, you know, I it's exciting for me to know as I'm taking care of my cardiovascular health.

And I'm really aware of that, that it's having a positive impact on the brain. I think I always had a hunch that it would, but it is exciting to see the actual photographs and and the studies being published.

So, so that's really exciting. It is. It is really exciting and it's really exciting to have the research and the data supporting the work that we're, that we're doing.

Yeah. So, you know, I know you have a lot of practitioners in your network, but what's the best way for people in general to learn more about how to access calories? Education.

Because there's a lot of educational content, and then also the products and learn more about the products and how they might be useful for someone. Like if you're a practitioner or a consumer, you can go to Cal roy.com that cal ROI Cal Recon.

We have lots of research, graphs, drawing lines of the like. Okay. Like photos of look like cookie like, so you can actually see it. It's really fascinating.

But please go to the website. You can read all about that, like, okay. Like, you can learn about our products, you can learn about the science and the research behind the products.

And, if nothing else, like I said, just come to the website and learn more about the like, okay? Like talk to your doctor about it. Take all the information that you're getting out of this incredible summit, which is so exciting.

And, you know, yeah, apply it to your life and, and talk to your clinician. Awesome. And your health has been really excellent. I don't know if you have anything else you want to add, but I just want to thank you so much for joining us today and sharing this really important information with everyone.

No, I just want to say again, you know, thank you. You have been a great partner. Like I said, I've known you for 13 years. I've learned a lot from you just by listening to you speak at various educational events.

And of course, you're on our science and medical advisory board. And, a big part of, the spirit of Calgary. So we appreciate that. And, you know, to the people listening, congratulations for putting your time and energy into such a worthwhile endeavor.

This summit is so important. The takeaways you're going to get are so important. And I'm really excited to see and hear how this is having an impact on people.

So thank you for inviting me. Oh, absolutely. Absolutely. And for you, my viewers, if you have enjoyed this discussion today, which I cannot imagine, you have not, please join some of our other sessions where we continue to dive into my passion solving the root causes of cognitive decline and leading you to better brain health.

Thanks for joining us today.