Summit Introduction and Guest Bio

Hello and welcome to a very special interview for the Reversing Alzheimer's Summit 4.0. I am your summit co-host, Doctor Christine 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 to help patients and practitioners be extraordinarily successful in this work. In this summit, I'm bringing you interviews with 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 and Alzheimer's for yourself and your loved ones. I am really excited today to introduce you to a friend and an extraordinary colleague.

Cara Fitzgerald and Doctor Fitzgerald received her Doctor of Naturopathy Medicine degree from the National University of Natural Medicine in Portland, Oregon.

She completed the first Council on Naturopathic Medicine accredited post doctorate position in Nutritional biochemistry and laboratory science at Meta Metrics Clinical Laboratory, now known as Genova Diagnostics, and that was under the direction of Richard Lord, PhD.

Her residency was completed at Progressive Medical Center, a large integrative medical practice in Atlanta, Georgia. Doctor Fitzgerald is the lead author and editor of Case Studies in Integrative and Functional Medicine, and is a contributing author to Laboratory Evaluations for Integrative and Functional Medicine and the Institute for Functional Medicine's IFM, their textbook for functional medicine with the Helfgott Research Institute, doctor Fitzgerald is actively engaged in clinical research on the DNA methylation using a diet and lifestyle intervention developed in her practice.

The first publication from the study focuses on reversal in biological aging and was published in April of 2021, in the journal aging. Her book, titled Younger You, was released in January of 2022.

Doctor Fitzgerald is also on the faculty at IFM. She's an IFM certified practitioner and lectures globally on functional medicine. She runs a functional nutrition residency program and maintains an excellent podcast series called New Frontiers in Functional Medicine.

She has an active blog on her website, Doctor Kara fitzgerald.com, and her clinical practice is in Sandy hook, Connecticut. Please join me in welcoming Doctor Cara Fitzgerald to speak with us about science based diet and lifestyle strategies for optimal aging.

Welcome, Carrie. Thank you. It's great to be with be with you, of course. And I just want to say I am thrilled. I am so excited to have your technology in my in my hot little hands.

I just want to give you a really shout, a huge shout out for the extraordinary work that you're all doing. So thank you so much for that. Thank you. Yeah. It's amazing.

Yeah, I'm really hoping that it's going to help millions of people. That's my goal. Awesome. Let's hold that energy. Yes, let's hold that energy. So maybe you could start us out by, setting the stage a bit on your recent research.

Can you explain to the audience what epigenetics is and then how that's relevant to healthy aging and brain function and maybe even to neurodegenerative disease and cognitive decline?

Yeah. For sure. So, so epigenetics is, you know, just if you, if you look at the word and break it up at the above genetics, your genetic material. So epigenetics, the science of epigenetics concerns itself with influencing which

genes are on and which genes are off.

We know we can't change our genetic material. That's what we inherit. You know, and, and and, you know, we can't redo that, at least at this point in time.

But we have a lot to say about epigenetics. It's really pretty extraordinary. Epigenetics kind of, is influenced by our lifestyle. You know, by our habits, etc.

and that, you know, over time will dictate what genes are on, what genes are out. So we it's it's it's it's a it's extraordinary power and it's extraordinary responsibility.

Our choices even down to connection. So from what we put in our mouths, maybe the toxins or exposure to whether we're moving our bodies, etc., all of that, has say over what genes are on and what genes are off.

And so obviously, you know, we just want the absolute, you know, optimal pattern. And we also know what's cool is that, you know, new research is really showing that it's right in epigenetics that we can see the phenomena of aging itself.

What Epigenetics Means for Aging

I mean, it's really kind of extraordinary. So we're starting to really tackle what aging is. And aging itself off this journey, you know, basically breaking down until we until we leave the planet, is the biggest risk factor for nerve degenerate neurodegenerative conditions.

It's also the biggest risk factor for diabetes, for cancer, for cardiovascular disease, for infections like Covid. So if we can get in and influence epigenetics, you know, we really stand a chance at turning the volume down.

And our risk for these diseases. So to marry this to our work, we're on functional medicine just like you are. And so we're thinking about the whole person and optimizing their wellness, optimizing their health span, optimizing their lifespan.

You know, addressing through this whole person lens and conditions they have and including, you know, neurodegenerative conditions. So functional medicine is really well suited for influencing epigenetics, really well suited.

And so it was about, you know, almost a decade ago, really actually more than a decade ago now, amazingly enough, that we designed a diet and lifestyle program, through that functional lens that we thought would sweet talk epigenetics like that was our end game.

Can we get in there and change gene expression using functional medicine? Our hypothesis was, you know, absolutely. Yes. Right. But it hadn't been done yet.

I mean, that's kind of the extraordinary thing about what we were able to do. We were given an unrestricted grant to research whether we were influencing epigenetics.

And one of the one of the questions we wanted to answer was this aging piece. You know, since we can look at aging through gene expression, through epigenetic, what was this diet and lifestyle program, changing that.

And so our first, publication, as you referenced in my bio that came out in 2021, said yes. So using one of the first generation clocks and that's a whole nother conversation.

The way we measure it is changing. But using the one of the very first, really the first clock, because our study was early, very early, we showed that in the group that followed our program, we were able to slow their aging process in eight weeks, as measured by this clock, by over three years as compared to the control group that didn't do our intervention.

And you and I were just talking about your interview journey. You know, I went into a massive interview journey after that very unexpectedly is somebody who sort of hangs a little bit behind the scenes.

My my existence changed with that paper because it got attention really the world over. It was extraordinary that we had shown that a, a diet and lifestyle program could really have such a profound impact.

So let me let me stop there and see if you've got any questions or. Well, it was profound in that such a tremendous change was accomplished in such a short period of time.

Right. I think that was one of the things that was the most remarkable in the study, is that it doesn't take years and years to accomplish this. It just took a few weeks, eight weeks of doing the right things to talk to your genes.

That was really fascinating to me. Yeah. And exciting. And we actually showed this in healthy individuals where it's harder to move the needle. So it just it validated how powerful the work is that we're doing.

And what's extremely exciting is that since that 2021 publication, there are a lot of studies coming out, looking at diet, looking at lifestyle, looking at exercise, looking at nutrients like vitamin T and just really validating the power.

So, we're extremely excited. And one of the things that we continue to work on with our intervention and, you know, we've got more publications on the way, is, you know, what parts really seem to have the biggest influence.

And beyond just looking at the aging clocks, which actually comprise only a small amount of, of the, of epigenetics of the epigenome. What else did we do?

So those are two publications we're working on. We changed the expression of many, many, many genes. This science really lets us look at the nitty gritty, like the nitty gritty of how our food and lifestyle really influences what's happening to us physically.

We're getting, you know, more and more granular and it's exciting. And we continue to research it and, you know, continue to just be very excited about what we, what we have going on.

And I want to just bring it back to your work because your work is so exciting and important. You know, our program is involved, just like, you know, say the you know, the program the that Dale Bredesen has, has launched and your work is going to just help actualize that.

So the more that we can just help and refined it and find the most powerful pieces. I think the more lives we can change, and there are a lot of pieces in common.

So we know that some of our pieces, some of the, some of the elements of our program actually really all the elements of our program are going to have a favorable influence on, brain health and brain longevity and brain epigenetics.

Yeah. I couldn't agree more. One of the things that I it kind of bothers me, actually, is that we, we talk so much about how aging is the biggest risk factor for neurodegenerative disease.

And what bothers me about that is that the implication is that you have no control over it. And so people, people, I think, get the false sense that, you know, oh, well, there's nothing I can do.

It's just going to happen. I'm getting older. I'm just aging. And really, what your work has shown and and what the work that Doctor Bredesen has done and what we're doing in the reversing cognitive decline research study shows us, is that part of the aging process is really just the accumulation of the insults to our physiology, to our epigenome and changing which genes get expressed.

Diet, Lifestyle, and DNA Methylation

And so it isn't so much an entity aging an entity into itself, as it is an expression of all of the information that our body has gathered or been exposed to, and how that's altered.

S yeah. That's right. Yeah, I, I agree with that massively. I mean, I do think for, you know, anybody out there who's kind of likes to get out there is you know, mammals, we have expected life expectancies, you know, and you can look at there's actually a mammalian clock.

So we with it so that there is a phenomena that's kind of shared that I think is being correct by science. But this bigger piece of the aging journey is our choices day in and day out.

You know, our lives over okay. But so, so our choices. And I don't want that to be overwhelming. Oh my gosh, I used to smoke. And you know, that's going to make me really anxious.

I have no choice, you know, but to develop certain problems. No, because our what our study showed was that we do it. You know, we can alter our habits.

And in a very short period of time, you know, change the journey remarkably. So I think this is really a promise. And, you know, illustrating the potency of the tools that we have, like, we, you know, day in and day out, our choices can absolutely make a difference.

And in some cases it can make a difference really, really quickly. Exactly. And I think too, we're not always talking about extending the duration of life so much as we're talking about extending the quality of life as we age.

And those are a little bit different too. It's not. It's just about living forever. That quality as we, as we I mean, you know, we already have with, you know, the modern tools of medicine, the heroic interventions and the drugs and so forth, extended life expectancy, you know, a couple of decades over, you know, turn of the century or a couple centuries ago.

So we've already done that. But then when you look at the state, the stats mystics of that, you actually see, okay, lifespans extended, but health spans are not.

So we end up spending, you know, the final couple decades of our lives really not doing well at all. You know, with multiple conditions, with the disease, you know, these diseases of aging we're talking about on multiple medication, you know, spending our life, our life saving medical care, you know, it's it's pretty dismal if we don't make these choices around bettering our lives.

You know, the outcome looks pretty dismal for, you know, for us. And so there's there's a huge motivator to, you know, begin to make these changes. Yeah. There really is.

Maybe you could talk a little bit about how you were able to tailor, the diet and lifestyle to optimize epigenetics. Yeah. Like what that program is. Yeah.

So we looked at the research and specifically we wanted to sweet talk epigenetics. And one particular epigenetic mark is called DNA methylation. So that's the most studied.

We can measure it really well in the laboratory setting. And so we wanted and it was clear we know in functional medicine, in functional medicine that methylation is something that we can influence with diet and lifestyle variables and nutrients and, and so forth.

So this is just looking at the methylation phenomena. If anybody's ever thought about B-12 and folate that, you know, is directly related to methylation.

So most of us have some kind of an idea of methylation because we know those nutrients are important. And so we specifically wanted to look at methylation related to gene expression related to DNA.

And so we just combed through exhaustively the science on it. And we saw that certain dietary components would move the needle, in lifestyle components.

So our diet is built brick by brick, every single, you know, morsel of food that's placed in the mouth is what we call an epi nutrient. So it has the potential to sweet talk DNA methylation to sweet talk the epigenome.

So you're eating for that optimal expression. And I should say, you know, there's a very gentle intermittent fasting structure, 12 hours on 12 hours off.

And that information where there's an absence of food is also an epi nutrient. It also sweet talks gene expression. So we put these together and then and I'll circle back and talk about specifically what those nutrients look like.

And then we looked beyond that. And so that exercise is an epi nutrient if you will. You know engaging and exercise is really it's like eating kale. You know, it's a it's potent.

And the reason I say that it's funny, but they change. They sweet talk the same genes. They behave similarly. So you eat all your greens and you can favorably augment gene expression in a similar pattern to exercise.

It's so extraordinary. Sleep is an epi nutrient. If you're getting enough, if you're getting adequate deep or REM, you know, just all of it. That is another epi nutrient extraordinaire.

We saw it. Things that are damaging to gene expression so we can think about, you know, ultra processed foods, etc., toxins, etc. stress. Stress is, highly toxic to the epigenome and to DNA methylation if you're very stressed, and if you're not, layer onto that, you're not sleeping, you know, you're not exercising.

All of these can be measured as pro aging, pushing you along that journey to developing those chronic diseases of aging. I was I really developed a strong appreciation of how damaging stress can be to and, you know, conversely, managing stress and getting aging in meditation, engaging in some kind of a relaxation activity, tai chi yoga, those are potently anti-aging.

They're potently anti-aging, especially when you do it consistently. So changing gene expression is about really developing habits with a but with a caveat.

There are data that demonstrate that even one meditation event or one exercise, can favorably begin to shift it. So yes, you need the habit. But also, you know, start where you're at, you know, do something.

It's pretty extraordinary that just one event can have a favorable response. So those we built all of those, elements into our program. And to give you an idea of what we think of as epi nutrients, these are going to be things that you're familiar, that folks are familiar with here.

You know, veggies. I alluded to kale before. You know, your dark greens are potent. You're that cruciferous are really potent berries. Colorful veg. You know, your red peppers, orange peppers, you know, just go to the grocery store into the, you know, go to the outsides, you know, where all the fresh stuff is.

And those things are likely really epi nutrients extraordinaire. We were really excited to discover things like, you know, turmeric, green tea, chocolates, coffee, rosemary, most of our herbs, thyme, oregano, most of our peppers, our epi nutrients have these properties in them that favorably augment gene expression.

One of my favorite parts of the book that I wrote back there, you can see at younger you, is the epi nutrient appendix. So somebody can go in there and there's 30 pages of the foods where you can find these really important nutrients.

Those that I've mentioned sweet talk, how epigenetics happens where DNA methylation happens to support methylation. So on one hand you need to make methylation.

You need that called methyl donors. We need to make that information. And then you have these other nutrients that sort of make it go where it should go to make that information.

Those nutrients, those epi nutrients include, eggs, beets, you know, again, the green, leafy like kale seeds, nuts, even salmon, the DHEA that good fatty acid in salmon or other fatty fish, you know, has this favorable influence on helping, animal protein or protein in general, with, with the amino acid refining can help turn that methylation cycle and make those ingredients if people are willing to eat liver.

And many of us kind of shriek at that, the liver isn't really a methyl donor extraordinaire. So things with folate, things with B12, things with choline and betaine, that's the information that will make the methyl groups.

And then all of these other nutrients that I mentioned will help direct traffic. And so we designed a dietary pattern like that. It's completely nutritionally replete.

There's a lot of places to modify it according to your palate and your needs. And you know, as we showed in our and we actually have two publications out now, we can we just we showed that it it really makes a difference in gene expression.

Yeah. I think I mean, as you're listing off all of those things, my imagination is just, you know, visualizing all these beautiful colors of food and all the, you know, all the different ways that we can get these nutrients, these epi nutrients into our diet.

And that really is one of the key things that I think people can take away, right, is just having a lot of varied colors from nature.

Brain Health, Genetics, and Environmental Risk

Yeah. From artificial colors meant from nature. That a lot of those are to signify the value of the nutrients that they contain. Yes, absolutely. And, you know, for people who are beginning on this journey and intimidated, like, oh my gosh, I'm going to have to do all of this and completely change everything, and it's not going to taste good.

And they have a lot of anxiety. I confronted that a lot like I was in, you know, I was doing a lot of interviews when the book came out, and frequently that's what people were asking.

And so I said, take your highlighter pen, you know, go to that epi nutrient, appendix in the back and highlight just the things that are already in your house, guarantee you have epi nutrients in your house that you're not aware of.

So go and highlight what you're already doing right. You know, and then after that maybe take a different color highlighter. What are the things that you're willing to bring in?

I mean, from there, we can all begin to think about making every single forkful packed with those all important nutrients. And it doesn't have to be intimidating, overwhelming, and complex.

Yeah, I think one of the things that I did years ago when starting on my own functional medicine journey for myself and my family, is it was a big shift for us to go from, you know, kind of a traditional standard American diet with our, you know, our, our meat, our potatoes and a vegetable.

And the first thing that we just started doing was just taking out the starch, whether it was potatoes or rice or pasta, whatever it was, and adding another vegetable.

And it was crazy how how challenging a shift that that was. But it's so it's such an easy, straightforward thing. And then also just getting past the mindset that, you know, having one vegetable on your plate is enough that that's your veggies.

And trying to bring in this idea of having multiple different options so that you're getting all these different, all these

different colors. And I love your suggestion to highlight what you're already doing.

Well, because we we tend to ignore those things that we focus on what we're not doing well, and then the things that you're willing to bring in because it just gives you such an easy place to start.

Totally. And then you're kind of as you do that, that exercise will enable you to kind of get the feeling around what an epi nutrient is. You know, you really get a good sense of that.

And we want you to hydrate. We want you to do, you know, use good oils, olive oil, avocado oil, you know, a coconut oil, etc. all those ones that we know are, are fabulous and, what else?

You know, again, take a little time off of the evening. And to your point, we're not doing a lot of starches in this diet. So it's a little keto leaning.

And we know those ketones, are incredibly important for brain health. One of the things we saw in our, in our participants was that those who needed to lose weight, lost weight, triglycerides drop, cholesterol drop.

And I want to say that this is a healthy cohort at baseline, healthy, healthy guys. And so we were really moving into the realm of optimizing, and we our first cohort was men.

And then we published a case series in women. And the women actually outperformed the men as far as bio age reversal, funny enough. But, it's not quite comparative. It was.

We used a different specimen for the second study, but it's know it's kind of fun to report on. Yeah. And especially since two thirds of women are affected by are two thirds of people affected by cognitive decline are women.

So we need a we need a little leg up here. Yeah. Yeah. There's cool research. Just circling back to the cognitive decline story. There's just really cool research on, well, I shouldn't say it's necessarily cool, but we know the whole ApoE4 story really turns the volume up on brain inflammation, and it's that chronic exposure, like, again, thinking about habits.

It's turning the volume up on that inflammation. You know, over time that changes the, cellular behavior towards something more pro-inflammatory. Specifically, those microglia really start pumping out the pro-inflammatory compounds.

And but it's here and this is the cool research, you know, that our diet and lifestyle pattern, the work that you're doing, you know, everybody talking on this summit, you're going there's people will receive.

So so so many pearls can really change the behavior. You know what ApoE is able e4 excuse me, is pushing forward so even with, you know, when genetics are there, we have a huge say.

So you know, on whether those genes get whether their influence can really you know, come to bear on clinical outcome. Like we again, we just have a lot of say so.

And I know you see that in your work routinely. Yeah, absolutely. I think even with the, you know, with the ApoE4 carriers and I'm going to be speaking, also with, Doctor Sharon Housman Cohen on, on genetics.

And so we'll be diving a little bit deeper into this. But even with that, there are other genes that you can inherit that can offset that risk factor by more than half.

So we you know, we most of what we inherit is not genetic inevitability. And people tend to get a little bit caught on on specific things. Now ApoE e4 is very influential.

And I'm not saying that we can't pay attention to that because of course we must. But another one, the MT4 that has to do with methylation. There's, there's a pretty high prevalence of abnormalities in, in those genes, in those

gene subsets.

But most of us don't experience problems with methylation. It's more of like a rheostat. Right. Like you're you're particularly good at methylated or you're a little bit less good at methylated.

But depending on that epigenetic expression, that can really unmask some of those weaknesses or strengths. Yeah. That's right, 100%. I think you know, it.

It's it. We can't underestimate or understate the influence of our choices. You know, one of the one of the extraordinary a huge for me in this arena was looking at the Bracco mutation.

So anybody, you know, Angelina Jolie really brought it to public attention when she had a double mastectomy. And then she had a full historic to me because she has that, that, that, particular mutation, and her mom passed from breast cancer really, really, really early on.

With this mutation. So when you look at the statistics, it looks like the the likelihood is complete. This gene is very, very powerful. So I think she, I think she made the right choice for her, for sure.

However, when you look at it, you know, through the lens of time, you know, where they went and looked at, you know, blood samples from the from the I think the 40s and 50s specifically.

You saw the incidence of cancer associated with Bracco was much, much, much, much, much lower. So it's still the environment. The environmental changes that we are experiencing today, can potentially turn the volume up on those genes, you know, making them more seem more impactful when in fact, it's about the environment again, which is very empowering because we are in the driver's seat of our environment.

Yeah, we sure are. We sure are. And that's such an important message. Yeah. And one of the things, you know, just speaking. So some people are going to say, well, functional medicine is only, you know, available to, you know, the very wealthy.

And I want to say two things around that. And, you know, therefore, I'm not going to be able to do it in our study by design, we didn't insist on organics if they could do organic sources.

Yes, of course we wanted it. But we didn't insist on it, you know, because that would have greatly increased the price point. And we still saw our results, which is awesome.

It's very heartening. And there's other data out there that look at nutrients and their ability to detox from the toxins that we're exposed to routinely.

So your diet really does make a difference on the lifestyle variables that you're exposed to that can help. It can help clean your body.

Closing Remarks and How to Connect

And the other final thing that I want to say is that, there's some cool research happening at Mount Sinai in New York, at the Institute for Exposome studies, where they're looking at people live who live in inner city Manhattan and are exposed to tremendous amounts of toxins and pollution, and they're tracking asthma, and they're seeing that the incidence of asthma is, influenced profoundly by connection, community contact.

So you can be in this polluted environment, the things that will drive asthma forward. But if you have these certain things in your life that are available freely, it just takes us to cultivate.

You can offset that, increase risk. That is absolutely remarkable. Remarkable. Yes it is. It's such an amazing design that we have. There's so much not just redundancy in the system, but that just all of these different ways that our body has of compensating and adapting for things that we get exposed to, even the things that weren't present a

hundred years ago, just 100 years ago.

So it's like our genes have evolved to be able to deal with all of these thousands of chemicals, for example, that we're that we're being exposed to. But but nonetheless, we have this we have this thing that humans have been designed to do for the entirety of our existence that's freely available and counteracts that.

It's just amazing. It's incredible. So all of those foundational things that we know, you know, that our mom told us that are, you know, grandparents told us, you know, eating right, getting adequate sleep, getting sunshine, moving our bodies, you know, community connection, all of these, it's just they're they're profound.

They don't just feel good, you know, they they are good. Yeah, yeah. Oh, my gosh, doctor Fitzgerald, this has been, just such an amazing discussion. I really appreciate your work.

The the thoughtfulness with which you approach it and the impact, really that it is, it has and is going to have on everything that we do moving forward in functional medicine because it changes that perspective.

I'm just super grateful that our viewers on the summit today have gotten to hear this really crucial information. Thank you so much for having me. I just I loved it. I always loved talking to you.

I always love talking to you do so. I know that you have a lot more for people to learn from your work. We've talked about your website that was doctor Carol fitzgerald.com and then your book Younger You, which is awesome, by the way.

Thank you. And so is there anything else that people, might know to how to get in touch with you? Or maybe if they want to work with you or with your team? Yes.

So the best way to access me and my team, we do have a fabulous nutrition team who participated in our research. Our clinicians participated in our research.

So we're just ready to help you with our intervention and individualize it for you and whatever way that works. And you can access us at Dr. Cara fitzgerald.com doctor Cara fitzgerald.com.

There's also a fun bio quiz there. So if you want to get an idea of what's going on with you on the aging journey, you can take our free quiz and you can find that also at Dr.

Cara fitzgerald.com. Awesome. Well, I am sure our viewers have enjoyed this discussion today as much as I have. And so if you have, please join some of our other sessions on the summit where we will continue to dive into my passion solving the root causes of cognitive decline.

Thank you all for joining us today. And thank you, Doctor Fitzgerald.