Reversing Alzheimer's: Science-backed Strategies For Extending Brainspan Transcript

(Transcripts are generated by AI and may contain errors)

Introduction to Gut Health and Mental Health

Well. Hello, everybody. Here we go again. What a great time to be talking about solutions for all of the struggles that we're having. Listed depression and anxiety and thinking about solutions.

Thinking about what can we do each day, every day to orient ourselves, to take better care of ourselves? We know there's so much of health gaps in mental health out there.

There's so much great new science, there's so much information and false promises. So I really am excited to have Doctor Elena Evanina, who is one of my just good friends and favorite gut, doc friends.

Evening, doctor. Evening. Thank you for joining us. Welcome to the Depression and Anxiety Solution. So thanks to you. Thanks so much for having me today.

Well, you know, probably as much as anyone you have founded the center for Integrative Gut Health in New York City. And so you see it all the time, those of us really struggling in some ways.

Everybody watching is probably had some gut health problems. And if you're here in this solution summit, you're thinking about your mental health. So can you tell us just quickly, what do you see is the relationship between mental health and gut health?

Sure. So the gut brain axis is a really fascinating connection. And it is complex in a beautiful way. And that one affects the other and the other affects.

Right. Like it goes both ways. And so when we talk about the gut brain axis, we actually are when we say gut, we're actually thinking about the gut's nervous system, right.

The second brain we hear that term, it's over 100 million cells that line the entire gut from your esophagus to your rectum and plays a key, key role in understanding what's going on in the gut, digestion and everything else.

And it communicates with the central nervous system. Of course, your brain. And one of the most interesting ways, too, that they do communicate is through the vagus nerve.

And so the way again, you think about it as something's going on and in the gut there's there's this motility, there's dysbiosis after antibiotics. And you, you know, you're sending signals to the brain that can actually lead to anxiety, depression, you know, from an imbalance in that gut microbiome.

And specifically they've even, you know, we've taken the gut brain access to the next level, calling it the kind of microbiota, you know, gut acts, gut brain axis.

And so now you have these steps of, like, understanding what's happening in your microbiome. It your microbiome is this beautiful living organ that's producing things.

It produces neurotransmitters that we always think about when we think about mental health. And so it's producing all these things that have an effect, you know, on the entire nervous system sends a signal to your brain.

Understanding the Gut-Brain Axis

And so there's just this constant flow of information. So I think that the connection between mental health and your

gut health is a very real and kind of actionable system to think about.

If you're struggling with mental health issues. So thank you for that. It's such an exploding area of interest. I think there's a lot of, as I said, great research, but also maybe misinformation.

Are there some trends or things that you see in the kind of gut health world that concern you, things that we want to, you know, kind of look out for or just be cautious about that aren't great first or second steps when it comes to taking care of our gut health.

Absolutely. And I'm sure you see this all the time. I mean, companies are putting prebiotics and probiotics in everything, right? It is so trendy. It's all over TikTok.

You know, I think there's this feeling that prebiotics and probiotics can just solve all problems. And so if. I hope for when I take on whatever, I just got some friends of today and they had prebiotics or probiotics on them.

And I was I was like, okay. It's kind of just the magic, you know, fairy dust that we just like, think of. If we can kind of sprinkle on everything, it could help.

And it there could definitely be a positive impact. But what I want people to realize is that it's not, you know, the answer is usually not so simple if you're, you know, dealing with mental health issues, usually taking that premium probiotic that might come in a soda form, right.

Or, you know, again, all of these different products now that that just they just added it for, you know, for marketing value, that's probably not going to do a whole lot either for your gut health or your mental health.

So, you know, when you're looking for support, when you're looking for answers, you know, don't don't, you know, kind of bypass the gimmicky easy solutions and instead, you know, take that journey of, again, like seeing someone like you, a real expert who understands the connection, going through the therapy and then seeing someone like me or any other gut health expert who understands and can help you understand exactly what's going on in the gut, and then you fix it from again from both sides.

So if for some of these things like probiotic and probiotics, let's talk about because they're really important ideas and they are getting marketed to us a lot.

I love the idea that you put out there, which I think everybody listening resonates, resonated with me because I'm susceptible to it just like you are, which is you hear about this quick thing, oh, I'm just going to put probiotics in my soda or anything, everything.

And it's like magic dust. And we know mental health is complex. You know, it's not that it requires more work, but it certainly requires more attention, especially if you're in the solution summit.

Maybe there's a, you know, some symptoms and struggles that you're having. And so I think the, you know, the big message here is in some ways find a partner with your gut health or find a reliable source of information like doctor, even you know, where you're not just getting sold some products.

You really getting a good set of information. Well, let's get into the what to do about our microbiota and what to do about things like probiotics, probiotics and fermented foods.

And we hear these terms all the time. And I just want to make sure we're all on the same page. Doctor evening to teach us what's a probiotic. What's a probiotic. What are fermented foods.

Sure. Absolutely. So prebiotics are plants. They are carbohydrates that feed your good bacteria. So they are found in foods they are found in basically all plants, anything that has fiber.

Right. So prebiotics equals fiber feeds your microbiome. Probiotics are the live organism. So that's actually when

you you know again look at your look at your bottle of probiotics.

And you see that lactobacillus. Right. So that is the actual live organism. There's an interesting term called symbiotic. So when they put those together, you put the prebiotic with the probiotic and there's more data coming out that they're probably more efficacious when taken together.

Right. So if you are feeding that probiotic with the previous biotics when you take it, it can increase the chances of that probiotic colonizing your gut and giving you more sustained, a more sustained response.

Prebiotics, Probiotics, and Fermented Foods

Right. And then fermented food is basically food with live cultures in it. That's been kind of cultivated, right where you have a starter, right? Like with kombucha, you have Scoby or with miso soup, you know, you have a live culture or a live, you know, a live yeast, a live bacteria usually add some sugar.

That bacteria will grow, it'll produce other bacteria. And you get this beautiful, diverse live bacteria, live yeast in an actual food. So it's, it has probiotics in it, but it is actually something you can eat and bite your supermarket.

One of the things that the probiotic products have are a number of colony forming units or curfews. And I've looked into fermented foods and it seems things like kefir, for example, have a lot more cfas than something even like a yogurt or a sauerkraut.

Are there a number of curfews that you shoot for when people are struggling with their mental health, or is there some number that we should shoot for, or is it more getting a certain number of, fermented foods a day?

What's kind of your your general advice if we're wanting to improve our mental health, or at least, you know, follow some of the latest science that are diverse.

Microbiome seems to, confer some mental health benefits. Yeah, absolutely. So I think that when I'm talking about probiotics and when you're using specific probiotics, you know, with intention to solve a problem, especially based on science, then you review the studies and you kind of understand that there are a certain amount of cfas that would make the intervention more effective.

But I think when it comes down to fermented food, you know, the concept of food as medicine, you know, for me, thinking about cfas and in food and having someone kind of, you know, have to take that into consideration, I, I personally like to avoid that piece because some people find just kind of like counting calories or counting carbs or counting, you know, counting, the macro, you know, macros and food like, it can cause some health anxiety, right?

We all know that. Everybody listening. I just was just like, oh, I didn't get my whatever it is steps. My sleep score was, I didn't get my, you know, 50,000 cfas.

Yeah. Right. So I, I try to limit the amount of, of kind of details around, you know, food as medicine as far as. Yeah, like counting cfas of their fermented food, maybe it's not readily available on the label.

And so then you would be, you know, again have increased anxiety. So instead it's for me it's about serving servings per day. Right, drew. And it's like at minimum one serving.

And most people have zero servings. Right. So even adding that one serving of fermented food can really first of all, it does take an effort, right. You're going to find these foods there.

They're not like, you know, a simple food like white rice or an apple. Right? These are foods that have a lot of flavor. They are, you know, take some time to kind of figure out a way that you can incorporate them into your diet.

So I always tell everybody, start with one fermented food a day, right? You try them all out, you try natto, right. The natto is a very distinct flavor, very distinct smell.

Right. But, you. Know, sort of advance I think I've had one. So I kind of want to appeal to the mom in you that has, you know, developing palate and, yes, new to fermented foods.

What what are a couple that, you know, we should start with? And what are some of the ones that are in your diet every week? Yeah. So my so I would say that probably the first fermented food, the intro fermented food for me is like a miso paste or miso soup.

I think it is a very gentle flavor. It is salty, but you can incorporate it into so many things right? So of course someone can make an easy miso soup just by adding water and adding, perhaps making it more interesting later by adding different veggies and bok choy and things like that.

But you can just start with a broth, or you could turn it into a marinade. You can turn it into a, salad dressing, like so. It's really fun to use something like miso paste, which again, just has a really delicious savory salty, I guess.

Mommy probably flavor is the way to put it. So, so. And most people can tolerate miso soup really well versus that's a great recommendation. And I have I had a couple of gut health kind of episodes or periods in my life.

And I remember miso was a recommendation to help me with that, really help where it's needed something that was going to go down easy and be satiating, and broths in general.

I found when I was struggling to just be really helpful. Miso is such a nice recommendation. Yeah, it just has that kind of gentle under the covers feeling.

You just feel cozy with a cup of miso. It's more amazing. People who have gone through a gut infection and they're recovering. I think it's a great, you know, crutch as you're trying to get your hydration.

Choosing Fermented Foods and Serving Tips

And where do we find it? In the grocery store? Because I think a lot of people listening don't have miso in their house. And everyone I'm just going to confess, I interviewed Doctor Evening and for my podcast, I drove a year ago, nine months ago, and I didn't have any miso in my house.

And the next time I went to the grocery store, I got a single miso. And I think I remember, like, I don't know, maybe like third little that. Yeah. And it's really shifted some of the flavor profiles in our house.

But also just now, I don't know when I feel a little bored or I'm feeling a little, let's say lazy. I just, you know, chop up some onions and some tofu and throw it in a little bowl with some miso and some hot water and Shazam.

You know, it's really easy and delicious. So really neat recommendation. What are some of your other favorites? So from one of my other fermented food favorites would be sauerkraut.

And it's one of my favorite things about sauerkraut is that there are many flavors of sauerkraut. So because a lot of people will be like, okay, well, I might not want to have this flavor profile every day.

So, you know, so regular sauerkraut is kind of this sour, right? I guess it's it's got that kind of sour, crunchy taste, little zingy. And then, you know, there are some really great ranch out there that have added turmeric or like, rye, caraway seeds or a little hot pepper.

And I find it so enjoyable to just have a big heaping tablespoon of a different flavor of sauerkraut on something simple like, you know, you're getting your white rice or brown rice, broccoli with tofu, you know, from from your local Chinese takeout store.

But then you bring it home and yeah, but, you know, you put a big whopping tablespoon of sauerkraut in it and it is great for everybody. This is my favorite solution.

So far, the takeout food brand solution. And we're going to put a little scoop of so well because we're all there. It all happens to us. I think we're here to I'll be honest and upfront about the fact that we we do order in food sometimes, and we shouldn't feel awful about that.

We should have tools to make that as healthy as we can, as good for our mental health as we can. So I love that solution of having a really stocked condiments, shelf with some different flavor profiles of sauerkraut or different fermented foods that you like, and adding them into your salads, adding them into your takeout order, and really making them a regular part of your diet.

I want to get into, some of what we see online around food and mental health and kind of your, take on it, for example, we see a lot of times the statistics that all the serotonin, 95% of the serotonin in your body lives in your gut.

And sometimes this is like almost an entire serotonin medication messaging. Sometimes this makes it sound like the gut's the most important and only thing for your mental health.

And I'm wondering what you think about that statistic. Is it true and how should we envision it? Sure. I mean, I definitely think it is true that I believe it's yeah, over 90% of serotonin is made in your gut.

And so there, you know, again, neuro different neuro trauma transmitters are created both as a byproduct of your microbiome bugs. They're actually produced in some of these neurotransmitters.

But actually the cells of the gut, like the lining of the gut, are so active and making serotonin and different neurotransmitters. And I think that's what people, a lot of people don't know.

I mean, of course, a lot of people see this fact on, yeah, TikTok or something, but the gut is not playing on its own. The gut is is, you know, there's no I team with the gut that the gut is part of so many different systems in, using and producing and using serotonin that I don't want people to think that, yes, the gut on its own can heal everything.

It's got all the serotonin and that's it. Serotonin plays so many different roles in our body. Right. I very often prescribe a medication that increases serotonin within the gut wall.

Right. It's a serotonin agonist that increases motility in the gut and is not at all having anything to do with mental health and stabilizing like neurotransmitters for anxiety, depression.

So I think that, you know, I guess like the the quick facts again, like those quick facts that get released, you know, on Instagram and, and TikTok are, are not to be taken in isolation.

So again they're yes that is true that it is there.

Serotonin, the Gut, and Mental Health

But it is doing it is playing a role in so many things. And again, the gut is making the gut make satiety hormones. The gut makes right, like all these hormones that we actually don't know.

Right? Ozempic like that's working through GLP is that again, the gut produces. So the gut is involved and active in so many bodily processes. But it's absolutely important to think about how again, it's working in conjunction, you know, using that serotonin in many ways.

Right. Crossing the gut brain axis. And it's in the it's in the brain. It's everywhere else. So it's not it's not the gut has, you know, has all the serotonin.

And it's keeping it keeping it to itself. Is it to think about it as an integral part of this gut brain axis that. Yeah, that makes a lot of serotonin.

That's not exactly the same thing as the serotonin, or it's the same molecule, but it's not like it's, you know, an implication of the serotonin neurons in, in the brain in the release, which really exert most of the control in our brains, but it influences those via the vagus nerve, via direct interactions.

Elaina, I'm wondering if you could, help us understand some of, let's say the best foods, you know, when we're recovering, let's say it's from an illness.

Let's say that, you know, we've we've had, some mental health symptoms, and we're eating really badly, and our guts just feeling off when you kind of need.

I don't call it a reset, but just, you know, something that works. We talked about miso soup. What are some of the other foods that, you know, feel like good and safe foods for you, for most people, as a place to start rebuilding gut health?

Sure. So so yeah. So definitely after a infection or after not eating well, perhaps you went to a wedding or bachelorette party or something. You feel it, you feel it again.

You always feel it in your head to right. You just feel fatigued. You're like, oh my gosh, I can't believe I did that to myself, right? Like, you feel your whole body feels what your gut just went through.

And it's mostly, I would say, because of what happened to your microbiome. There was such microbiome, devastation. And that is very well known for, you know, post viral situations.

And after recovering, let's say, from Covid, all that inflammation, everything that you know has happened in the gut. We know there are receptors for Covid in the gut.

It has wiped out the microbiome. It's wiped out the enzymes, the brush, water, enzymes that help people digest food. And so now you are just feeling so lousy.

So the important thing is to be very like gentle. All right. So again kind of easy gentle comfort foods. And I always lean on white rice and miso soup.

So cold white rice is actually a prebiotic. It's actually a resistance starch. And the resistant starch is probably one of our richest categories of prebiotic foods that basically bypass your most of your gut.

They do not get digested or broken down until they reach the colon, where they feed all your trillions of bacteria, where they ferment that food and create all their amazing molecules that are anti-inflammatory and then help you recover and help you feel better.

So prebiotics are key resistant. Starch is a particularly helpful type of fiber, a subtype of fiber that could help you. Can we do quickly with with all of our carbs?

I see this sometimes. Like, can I put my pasta in the fridge in my, you know, my race? It sounds like. And you seen bread suggested that I'm putting in there somehow makes it a more resistant starch if we cool it and and then heat it up again.

There is a, there is a property to it. Yeah. I mean I haven't seen the, the most kind of the classic example is in cold white rice. So for example in more processed bread and more processed foods, I'm not sure you'll you'll.

Get it's not all my favorite carbs, just like rice. I'll take it. Well, I think that we a lot of times when patients are struggling with anxiety and depression, there's a lot of carbohydrate craving and the different things drive that.

Sometimes it's we just want something simple and comfortable. Sometimes we want a little blood sugar rush. You know, sometimes it's just, you know, from feeling anxious and it's soothing all kinds of different reasons driving that.

But but that notion that, again, we have tools to do it in a healthier way. I have a patient is just, you know, with kind of the guilty about his weight race, love just love weight race.

And, you know, I always feel, oh, the no, it's not great for my brain. And I love this tip.

Gentle Foods for Gut Recovery

This is why I just put it in the fridge. Yeah. And, and and it just, it makes it a better starch for you. More resistant starch. And so I, I love that.

I love that tip. Yeah. People are afraid of white rice. And people in Japan whose diet very, you know, predominantly consists of white rice, are living longer and, you know, longer, more healthy lives than a lot of us here in America.

Yeah. That is a kind of striking, fact that, you know, for all of the concerns with the sugars and carbohydrates and white rice being stripped of all the nutrients, you know, there is some way that it's a foundational diet for a lot of cultures that are struggling with obesity, diabetes, certainly pretty much the same rates of mental health problems that, well, we'll tell us a few more seafood, some white rice that are, resistant starch.

I have a couple others do like cooked vegetables, like, how do we get these good fibers besides, the resistant starch is down there. Yep. So so, you know, you want to kind of slowly build.

So again, my my favorite foundation is that cooked cooled rice resistant starch. Plus something like miso soup. If you can get the prebiotics and the probiotics together that symbiotic relationship you are, you know, you have an increased, you know, probability that it will really help grow and impact your microbiome.

So and it's so simple, right? So simple. Then you can start adding things to that foundation. Right. So then in general, if you're again recovering from, you know, an insult to your gut, you want to have cooked vegetables, you want to have no skin on the vegetables if possible.

Right? That's really that kind of high residue that is harder for your gut to digest, right? The actual skin. So, for example, if you want to skin some zucchini, some squash, you want to roast them, then you want to put them in a soup.

You can even add some miso paste. Right? You can start incorporating vegetables. People sometimes do better with low Fodmap vegetables. That is a specific type of carbohydrate that is less likely to cause gas, bloating and a change in your bowel movements.

This is a concept in IBS. The low Fodmap diet, low fermentable oligo, di monosaccharides and polyols. So different types of carbohydrates. All plants are carbohydrates that may be more gentle on your gut.

I feel like I'm back. I'm back in med school on a study group. Lithium. Like, can you say that again, Elena? Well, everybody, FODMAPs is a it's a really it's an interesting, let's say piece that a lot of people are seeing when you get into the if you're struggling with your gut health in any way, with so many patients, you know, people struggling with anxiety and depression are you instantly get into the Fodmap.

Sometimes I see that list and my eyes glaze over. It's hard. Yeah. And a there are there's some, you know, I was a usual suspects that you see, you know, sure, there's the big list, but these are the 4 or 5 Fodmap foods that, you know, just try and reduce maybe for a little while and see if that helps.

Oh, yeah. The big ones. Two biggest ones, dairy and wheat okay, are the most troublesome out of the group, I would say. The other very famous ones are garlic and onions.

Those are, as you know, some of the healthiest plants to eat with anti-bacterial properties, anti-viral properties, anti yeast, you know, Candida properties.

There's so many good, good you know, parts of eating garlic and onion. But when your gut is you know, when you're when your microbiome is depleted, then it is very difficult to process those types of healthy foods.

And it is actually I would almost say like it's an epidemic of people not being able to handle to digest garlic and onions. They didn't. Even at the Met Gala, they actually remove all garlic and onions from everyone's plate, because it's like such a common cause of producing excess gas and discomfort of people are like, no garlic and onions.

And I'm like, oh no. The farts at the Met Gala. I'm not. Not in that dress. Nope. That I did. What about those are usually some of our favorite foods.

I think when I was learning to cook and kind of felt like everything started with some olive oil starting an onion, soft garlic so that that, maybe is a tough recommendation for some people.

But if your diet is really based on those, maybe slowing, minimizing a little bit again, as you rebuild, if you've been having some problems, this kind of brush border and established maybe a little more diversity, that those are really helpful to the thinking about dairy and, wheat products as being Fodmap foods, I think is also maybe helpful because so often that's just contained around like gluten.

And there's been so much controversy about that. But certainly people are really struggling with gluten and gluten intolerance. Can't, you know, as if everybody's had a mental health concern, wonders that.

Right. Like, oh, is it the gluten? Is it the dairy? Is there some way that we can figure that out, other blood tests, or do we just need to take a little time off and see what happens?

Yeah. So it's a good it's a good point because there are definitely, cases where food drives, you know, again, symptoms in the gut that will worsen mental health and worsen fatigue.

FODMAPs, Dairy, Gluten, and Celiac Disease

And I think that dairy and sometimes gluten can be the causes for sure. For, for for many cases, because they are very difficult to digest. They are so in, you know, in nature.

Right. We're actually not meant to break down dairy after childhood. And when you're breaking down breast milk, right. That lactase enzyme is supposed to plummet.

That is normal. But because of our agricultural, you know, industrial revolution and, you know, the way we've evolved, we've persisted in eating dairy.

And so that that enzyme has persisted. And so there are many reasons that people may not be able to handle dairy products later. And there is a test. It is a hydrogen breath test that you basically can do a breath test, a simple breath test at home to see if you are lactose intolerant.

During endoscopy, I also biopsy for those enzymes in the small intestine so I actually can get a list of okay, this is how much lactase you have. This is how much sucrose you have.

This is your Maltese palatinate. And you. Like, take a little chunk of my body and tell, tell me like, oh, this this works. And this doesn't like, made makes the. Wow.

Yeah. It's great. Right? It's like precision medicine, right? At the core, like, you can digest this. You can't digest that. So you definitely can measure, you know, and then of course of elimination diet for dairy, you know, to do an elimination for up to, you know, I would say a month, you know, you could definitely see if it makes a difference for you.

But dairy is a complex, difficult carbohydrate with the lactose. And it's got all the proteins that are hard to digest as

well. Right. Casein and whey.

And then it's got the hormones. So again, dairy is a complex, complex food that for many people, you know it's delicious and many people enjoy it. But again it's it's so hard to digest.

So it's it's a good culprit to think about if you're experiencing gut issues with gluten. Gluten is also very difficult. You know, complex protein for your gut to break down, right.

We know about 1% of the population has celiac disease, which is an actual autoimmune disease, which is very important to diagnose because if you have it and you continue eating gluten, it will cause so much inflammation in your gut that there are actually a very small percentage of people who can even develop T cell lymphoma from continuing to eat gluten.

In the setting of celiac. I think this is also important to emphasize that it's it's a small percentage of the population, but it's such a, you know, immediate in some ways here.

Avram moving the the, offending agent. When you remove gluten, the immune system isn't activated. You don't have the inflammation because it's so clear.

It also, I think it's really kind of generalized. Yeah, but it's not 1% of the population. It's all of us. And so one part of this in terms of celiac disease, if you've been having lots of gut health issues, are you carbohydrates?

So you eat wheat products and you have lots of this is bloating, diarrhea. It's like it's pretty quick, like within an hour or two that, you know, I eat wheat and have problems.

It's not that clear, drew. It's not that clear. So I guess, some people call it it's, you know, it's one of those conditions that produce so many symptoms around your body.

Right? I think in the past in medical school, you would compare it to syphilis because you would have, oh my gosh, this one condition can cause something in, you know, every system in your body.

How is that possible? Right. But it does celiac. Yeah. I don't know if you remember, there was a New England Journal case report about a suicidal patient in the E. R.

who was. It ended up that everything was due to celiac, right? Everything her all her mental health problems, her, you know, that led to suicide attempts were from celiac disease.

And so talk about a, you know, talk about gut brain access. I mean, connection, right? Celiac definitely has that. There's gluten attacks here right in the affecting the cerebellum there.

There are such connections. Patsy, break that down for what's attacks here. So so basically issues with like balance and and walking. Well people will still disease will, you know inadvertently eat some celiac and they they'll have like they won't be able to get it from the table.

They'll have attacks here. It's usually with more chronic it's usually more chronic, you know presentation. Not an immediate like that okay. It's more of a chronic that you just are always having inflammation.

Well I think with both with the suicidal symptoms, it's actually now I believe, Doctor Jeff Miller at Columbia is the head of, neuroimaging. His, his kind of mapped out this connection between inflammation and specific types of inflammation in the brain and suicidal thoughts.

And so that New England case report, you know, it used to sound like one of these really extreme cases and is more of a very good example of how inflammation does relate to mental health.

This isn't kind of yeah, I don't know, out there integrative medicine stuff that, you know, conventional medicine is

and also incorporating and thinking about.

And and then it's just really great. Science now behind, you know, how how the gut effects inflammation and how we can affect the gut to influence inflammation.

Wow. So many actionable tips. So many.

Diversifying the Microbiome for Mental Health

I hope new foods for everyone watching in terms of and listening in terms of things that may not be in your house, maybe if you're struggling with your gut health, some new ideas and and some hope.

You know, I think so many individuals are struggling both with chronic mental health symptoms and with chronic gut issues. And sometimes of those seems interrelated.

And you're having a hard day. It's it's certainly overwhelming. But I hope, our time with Doctor Elena Evanina, who is the founder of the center for Integrative Gut Health in New York City, helps everybody a little bit and just feel her hopefulness.

And, her, knowledge base. I didn't mention, I know it was in the intro, but, you are a quadruple board certified physician. You're the only quadruple board certified physician I know.

It's absolutely an honor to be a colleague to share, and patients to get to speak with you and get to watch the science unfold with you. Elena, I really appreciate your time.

And, all of the after you've made over the years to learn so much about gut health and to take such great care of our patients, everyone will have all of the shownotes and and, transcripts, up on the summit website, of course, along with links to Doctor Elena, even Nina's center in New York City, and also all the great information she has on our website, is also a great follow on social.

I always love it when your posts come up in my feed because they're just positive. They're inspirational. They usually have some tasty, tasty miso inspired dish.

You know, I'm wondering if you can just leave us all everybody watching. Just, one last thought about a solution that really has worked and helped you with your mental health.

Sure. I think, you know, like most people, I've had struggles with anxiety, depression, and I think you know, what's what struck me in, in the data is they found in anxiety and depression.

There is a decrease in the diversity of the microbiome. And so I would say that one actionable pieces diversify, diversify, diversify. Getting all those veggies, all those plants, all those seeds, all those all those foods at the farmers market that you have never tried.

Try 30 different foods a week if you can make it fun. Incorporate it, you know, with friends, family and add those, you know, fermented actual probiotic live foods.

And so just grow that microbiome that will help support your mental health. Wonderful. Well, well thank you so much for that, everybody. You've got your marching orders, more plants, more fermented foods.

Take care of your gut health and think about it's really important role it plays and affecting our mental health. I'm Doctor Drew Ramsey, your co-host for the Depression and Anxiety Solutions Summit, and I can't wait to see you in the next episode.

Until then, take great care of your mental health and I'll talk to you soon.