Introduction to Gut Health and Mental Health

Well hi everybody. Welcome back to another great episode for the Depression and Anxiety Solutions Summit. I'm Doctor Ramsey, your co-host. And boy, everybody on our team is so excited when we realized we get to share with you one of I call you like, grandfather of the microbiome Doctor Mayer.

If that's okay. We have Doctor Emory Mayer here with us, who really knows more than just about anyone when it comes to mood, cognition, anxiety, and how it relates to gut health.

Because he's just one of our leading integrative gastroenterologists. Most of his career has been at UCLA. You all know him from his great books. We've got the links to all of his work up on the doctor House website with, on the summit page.

So check out all of his information, his great books. Doctor Emory mayor, welcome to the Doctor Talks anxiety and Depression Solutions Summit. Thanks to you for having me on this.

On the summit's a real pleasure talking to you as usual. Well, we you've been a wonderful supporter of nutritional psychiatry and of my interest in mental health.

And so I wanted to have you on just to help all of the folks who are attending our summit to really get down to the nitty gritty about gut health and mental health.

We all know it's important today, and you've really been one of the individuals who's helped us see that. So I want to quickly for you just to share, like the kind of big milestones in your mind of how we begin to understand that the gut and gut health was related to mental health, particularly depression and anxiety.

Well, I would say, you know, you could go back way in history to Hippocrates, who said, all diseases start in the gut. I'm I'm not sure how they came up with this at the time.

You know, like an intuitive, insight. What has happened? I think the microbiome revolution has really focused attention of a lot of people on the gut.

So that is not a very sexy organ. Certainly wasn't before the microbiome came into place. All of a sudden, these top diseases names is gut health. And, you know, wellness related to gut health have popped up and exploded in the, in, in popularity and and then obviously, if you talk about the gut microbiome, you have to bring in diet because, the main source of information and nutrients that the microbes get comes from what we eat and, the microbes and translate.

So we learned microbes can translate, you know, food components, particularly fiber and polyphenols, into, into molecules that don't just stay in the gut, but they get into the systemic circulation to act on the on the vagus nerve.

And they they influence the brain. And in, most of that information has really come from experiments in mouse models and in mouse models. So you can't control everything, the complexity of the human mind, you can get rid of it.

You focus on. The mice don't have existential angst like I do, like wondering. They don't tend to not worry about climate change. And, you know, the this explosion of anxiety right now, even though during the pandemic, I should say, you know, to pretty well a lot of anxiety crazy amongst mice because they were moved to different parts of the university and, but anyway, the results from the mouse experiments were very clear that, the products that microbes generate from food play a significant part.

Just take tryptophan, the essential amino acid. Many studies have shown you know, how metabolites of tryptophan, like serotonin or concerning or indulge can influence brain function.

And I think a process in parallel went on, like people like yourself, it's free lists. And a handful of pioneers in this field have sort of taken that to the next step.

And making it a, an important part of psychiatry. I mean, not just sort of a fringe thing that, Hopefully not answering your evil. That's my request. Ask your patients what they eat, what's their relationship with food?

If they feel food plays a role in their depression and anxiety? And I think from their. Yeah. Thank you for saying that.

How the Microbiome Influences Mood and Cognition

But there's just such a great conversation and, and I think the microbiome for me really added from being on that fringe, really, you know, people know that what you eat affects how you feel. Right?

But not not like psychiatry, how you feel. The microbiome is one of those pieces of science that help pull us and pull nutritional psychiatry into a more mainstream consideration.

You can't deny the excitement, around the microbiome, around gut health, around all that, like cool science data, whether it's some metabolomics or, you know, all the omics that, that, that, you know, given a lot of excitement in science today, and that's really helped.

Nutritional psychiatry, I think, be on the map because when you go downstream, like, okay, you know, patients on this couch, what do we actually tell them from the frontiers of science and all of this, it kind of comes down to things like more plants, more fermented foods.

Let's think about your microbiome. Well, you know, I consider that related to anxiety and depression. That's an interesting opportunity. You know, potentially. Yeah.

And this is this this is this, this this paradox in the current situation that, you know, the, the solutions that we have right now are actually very, very simple, as you already mentioned.

You know, fiber and polyphenols, meaning largely plant based diet. The science on the back end is we're just at the beginning, really. I mean, I think it's not there's not a there's not a six month period going by without major changes in the technologies and the insights.

And now with all these bioinformatic techniques. So we have to realize the science part of this is in its infancy. And but considering how much funding goes into it and how many intelligent people are working on it, there will be major repercussions, I personally think.

And how much new technology. Sorry to interrupt here, but when you think about, you know, AI and sort of these models that take in lots and lots of data void where there's just endless amounts of cool data and the microbiome, I mean, I was shocked to learn that, you know, I'm 27,000 genes or something like this.

That's it. That's all my genetic material. And in my gut, there's, what, 2 million ish genes? Is the statistics. I say, you know that better than I do, or the statistics better than I do.

So I might have them wrong, but just, so much genetic information in terms of so. Much information, and you almost have to say that's stored wisdom from billions of years of interacting with the environment.

The microbes have lived in the oceans of the world for, you know, at least four, 4 billion years. And during that time, it was just the microbes. There were no plants, there were no.

So they were interacting with each other. So that's one important part. But also with was, you know, organic materials in the oceans. And only then when animals, the first animals like the hydra, appeared in the oceans, they started interacting with that and then transferred much of this wisdom into like the gut nervous system and nervous system of these first marine animals.

So I I'm always impressed by the fact that billions of years of experience of communicating, you know, goes into these million genes that the microbes have, and that information would be just scraping on the surface, really what that implies and what wisdom we can extract from that.

I think your most recent book, you have so many interconnected plates and everyone listening, I hope you can appreciate, why I had to have Doctor Mer here.

We had to because, the inspiration of thinking of your food, and and it is a, fuel and information for, you know, a kind of timeless, ageless set of genetic wisdom that's part of the planetary history.

Those are the types of big thoughts that I think when we're struggling with anxiety and depression, when we can settle down and get in touch with them.

It really it really helps. The science is not overwhelming, as you said. It kind of comes down to some simple recommendations. You the science. I personally think, I mean, I think with the dietary and lifestyle modifications, we can do a lot.

Well, let's talk about some of your favorites. You know, I know it's hard to make general recommendations for clinicians like, like us, doctor mer, where it's just, you know, you're used to getting a very specific, patient with a specific complaint or concern or challenge and kind of working in that way.

And so sometimes, you know, it's hard to make these general recommendations. But when you look at the average American diet, there are a lot of places where I know that you want us to intervene.

And I was hoping you could share with the some of your kind of interventions and then, to make this a little bit more fun, but also to create some great visuals because I know a little bit about your home, you tell us a little bit about how you apply that in your own home and favorite types of foods or foods, and then where you're seeing that on your interconnected plate.

Yeah. I mean, writing my first book, The Mind Gut Connection and, you know, and then having the pandemic come around, spending a lot of time, in the kitchen and, and, you know, preparing meals together with my wife.

That really changed my, my diet and whatever I wrote in the book. So I'm just as a, as a gastroenterologist, like ten years ago, I was not that particularly interested in diet, like most of my colleagues were not trained in it with at best, we referred to a dietitian, but reading the book and then experimenting with the contents of the book, particularly, how do you translate into the actual meals and, and the the timing of your meals?

Dentists really emphasized to us several concepts. I mean, one is it's it's, it's not just the components that you it's the variety of what you eat. So if you if you want to go on a healthy plant based diet, it's a variety of these plants, these vegetables and fruits, not just.

So if you just switch to eating tomatoes, you know, every day in and out, it's not going to it's not going to help your microbiome diversity or richness.

Diet, Fiber, and Microbial Diversity

But if you go to your 15 different, you know, vegetables a week and, and the same number of fruits per week, provided you have access to it, there's always this issue about, you know, how many people in the US have access to this kind of variety?

Well, I'm going to I'm going to say access versus easy access. And so I think food insecurity is a really important thing to bring up. But I do I do think for everyone there's a challenge of just getting on a regular rotation of a diversity of plants.

And, and I think the really important part, Doctor Mary, you pull up for us is this isn't just about like, you know, eating more regular, you know, a few times a week.

This is about having a diversity of leafy greens, microgreens, kale, arugula, radicchio. You know, we want to see different plants and a variety of things like nuts and beans and seeds, as well as the fruits.

I've heard that Tim Spector talk about trying to get 30 a week, and I like how you kind of give us 15 fruit and 15 vegetables just because I love fruit.

And I think it's such a also, it's just a full of vitamins and minerals and often much maligned in the longest world because, you know, of concerns of it being sweet in that meaning.

Sugar. You mean? So a couple of things. So first of all, in this kind of, you know, I always call it a largely plant based diet, not vegan or vegetarian that I promote.

It has a lot more than the the polyphenols from the fruits and vegetables and the fiber. It has all these micronutrients, you know, the the minerals, the vitamins.

I mean, there's a list of things that we've been the people have been studying for a long time. But I think in terms of the microbial health and I always feel like if you want to eat a healthy, the healthiest diet, you have to choose a diet that's healthiest for you, micro for your microbial ecosystem.

If if you eat in a way that increases the diversity and the richness of your microbiome, that will almost assure you that you will have to choose the healthiest things for your not just for your body, for also for your, you know, for your brain and the so does there are these these easy recommendations.

So first you start with, you know, largely plant based. Secondly you add the variety in it. The third one is you feed primarily. You have in mind what's good for your microbes.

You know, going on a keto diet. I mean, just the situations where that is beneficial, clearly. But there's also situations. So we have all these diets that people will promote without thinking about the microbiome.

There's also the low Fodmap diet, these kind of diets for very specific indications that may be beneficial. Usually they're beneficial for a short period of time.

They're not the long term diet you want to be on. Because people that come up with these sites, they don't think about, well, what happens to your microbes, you're starving your microbial ecosystem, you decrease.

You've actually been there looking at the microbes, taking, samples, running genetics on them. Could you share with us? Because I don't think we know.

I don't know what happens to my microbiome when I eat a bunch of fast food. And I'm going to follow it with a giant milkshake because I've just got to I'm taking, like, Lutz all the all of the French fries then.

And then I'm going to finish off some candy. Will you tell us what happens to our microbiome when we eat that way? Yeah. The main thing that that happens, so is clearly the, the, the change in the prevalence of individual microbes changes.

So, you know, we, we talk about the good microbes and the bad microbes. The good ones are the ones the so-called short chain fatty acid producers, because there's a number of those that we know that.

Can you bacterium a few could bacterium. First nuzzi they, they break down complex carbohydrates, i.e. fiber, into these short chain fatty acids. And one of these short chain fatty acids is butyrate, which is not just an anti-inflammatory, compound that acts on nerve cells in the gut, on immune cells, but also gets all the way into the brain.

So you have this endogenous, let's say almost aspirin or insert, you know, production that if you eat a healthy diet, you will always suppress any inflammation that may go on in the brain.

Did you guys just hear how, Doctor Mayer let us through the, basic biochemical logic of how lentils are anti-inflammatories for the brain? Because if I understood it, Doctor Mayer, the fiber in things like lentils, beans, and plants I can't digest and extract energy of from.

But if I cultivate this type of bacteria in my gut, the gut breaks down the fiber creates butyrate, a compound that then travels to my brain and is an anti-inflammatory in my brain.

Yes, that's that's exactly how it works. And I would say there's multiple processes in the to go on in the brain, pro-inflammatory and anti-inflammatory, pro-inflammatory, you know, and I mean, they always act and balance the fruit lemons.

We want to stimulate glial cells within the brain that then produce cytokines. The anti-inflammatory compounds that get to the brain are primarily the and, you know, butyrate, it's the balance.

So it's kind of balancing, balancing maybe some of the, the natural alarm systems if I've got some central inflammatory things going on. But I'm really making a lot of butyrate because my microbiome is just a, you know, production of inflamed inflammatory molecules.

You know, I can maybe offset it a little bit or keep it in balance. And I'll give you one example for inflammatory substances, I mean, the most common one are really these membrane components of of of microbes.

People talk about leaky gut. I don't like that term. It's it's what are. They when they say leaky gut, what do you think folks are referring to? Like what? What is that actually.

It's it's basically changing the what we call the permeability, the tightness of the barrier between the microbes in the gut and the immune system, the gut based immune system, which is just microbe.

And is that is something going on? If it doesn't, if it's not like leaky, is it? You know, well. You know, the I mean, the first thing that happens is just this barrier, this intestinal barrier is composed of a mucus layer inside the gut, and then the actual wall of the intestine, the epithelium.

And the first thing that goes down was, was a bad diet with the standard American diet, is that the mucus production and the mucus layer quality, that is just key part of the barrier.

It shrinks. And now it allows bacteria to come in contact with immune cells and stimulating their their cytokine production. In the worst case, you know, components of microbes actually get into the systemic circulation.

And there's a membrane component called LPs or lipopolysaccharide, which is part of the membrane of microbes, highly inflammatory. It's pro-inflammatory.

So once it gets into the system, it circulates through the body, gets into the brain, is specific receptors, toll like receptors. That respond to that compound, that membrane compound.

And that triggers the whole inflammatory cascade. So you could say in a healthy person, you shouldn't have any of these, these LPs membrane components in your circulation anyway, because you have the barrier in your gut should be so tight that it nothing gets through it.

It's not supposed to get to the immune system. The gut. But if that's compromised, for whatever reason, you still have that backup mechanism. These anti-inflammatory compounds, the butyrate, again from other microbes that would counteract this.

The worst case scenario is you have an increase in inflammatory and the decrease in the anti-inflammatory. And that's where the problem really starts.

And you if you have this for a long period of time, then you know, you get into a situation. Then we talk about the risk for neurodegenerative diseases like Alzheimer's and and Parkinson's, which don't happen overnight, you know.

But this is like a chronic inflammatory pressure. I'm having gut problems all the time. I'm eating the standard American diet and folks are eating it.

This isn't to scare anybody. We've all eaten that food. You know this some of this is about solutions and encouragement. It's about thinking maybe new ways, like, you know, what I think might help your mental health more mucus layer in your colon.

Fermented Foods and Sauerkraut Traditions

And, you know, maybe that sounds silly, but we're he was one of the no real leading experts, essentially just saying just that that this chronic pressure by which you lose a mucus layer, no bacteria in whatever is in your food is really interacting kind of rate with the cellular layer instead of it's simply being nurtured, nourished, and protected.

And then some of these compounds get directly into the brain. A lot of times when we hear experts or influencers or people out there talk about, you know, things like LPs getting into the brain and causing anti, causing inflammation, I get a little twitchy at anybody who knows me.

Well. I don't get twitchy when Doctor Mayer talks, because you will just you've seen the science, you've created some of the science. And so I, I have a real faith and a trust in you of, you know, the, the, experience and research experience you're bringing to us and bringing to the summit.

I think it's really. There's an interesting part to that. You know, what you just described. I mean, some of these concepts, like the leaky gut concept, has been promoted by non-scientists, particularly functional medicine practitioners.

For a long time, you know, like when I first saw patients in my clinic that told me they have leaky gut, they said that that doesn't exist in medicine.

You know, we don't know what that is. So this was like, maybe 15 years ago. And then I don't know how these practitioners came up with that idea, you know, because it was not based on science.

But in the meantime, you know, it's I. Wonder if it was this they saw these patients having a lot of good issues. They saw a lot of inflammatory markers, and they also saw a lot of mental health field pieces that sort of somehow got linked to inflammation that people maybe had flares.

I remember one of my, or my, mentors in residency, talked about a patient he had who every had, chronic paranoid schizophrenia and would do very well, but every spring would have a massive flare because they had horrible allergies.

And and he'd always, you know, kind of was his clinician had seen this connection between inflammation and this patient's, symptoms of their mental illness getting much worse.

And so, I feel like, a lot of the functional medicine practitioners ended up, you know, end up seeing a lot of patients where, for whatever reason, conventional medicine hasn't helped.

And and it feels like, you know, they're calling a leaky gut. You're sort of seeing is in some ways just the normal natural consequences of the modern American or standard American diet that you lose mucus layer.

It doesn't leak exactly, but more bad stuff gets in where bacteria can get in. You can measure that. And instead of again, there being this protection from a mucus layer, there being diverse bacteria that are feeding on a diverse set of plant fibers.

And we're I want to, hear about your favorite fermented foods, just like this is where the rubber hits the road, so I don't want to I know we're going through some big principles here, but I can't leave until I ask, what are your fermented foods?

What do we see in your house? On your table? So first of all, it's also the variety. You know, there are studies that the the variety of consumption of naturally fermented foods is associated with and decreased inflammatory mediators and with an increase diversity and richness.

The microbiome similar to what fiber does. So and that is the. Study is just a key. You know, it's not just about our plants. It's rotating through. Everyone, this is Doctor Mayer.

Got me on, you know, a more diverse fermented foods diet. It's true. A lot of you wrote in and DM me and I had a computer problem on the first minute.

5 or 6 cans a day. Doctor, mayor came in and said, you know, Rams, it's a lot of sugar. We need to get you on a diverse set of fermented foods. And I've got miso kimchi.

I've got more puffier. And, and I took some of that sugar from the computer. I even have a little flavored kefir, which isn't my best recommendation, but it goes down a little easier for me.

So thank you for that. So the. University, if you, if you had to pick one and and you know, I don't know you know if pick. A couple. Yeah. If that's been you know planted in my in my unconscious from my childhood that, you know, I mean sauerkraut was it was a ubiquitous, meal component for me when I, when I grew up and, And, and share with everyone a little bit about where you grew up and how did sauerkraut get used in your home.

So I grew up in a small town in the Bavarian Alps, and, looking back to that time, because I don't have any time now to get into this. Or talking to a psychiatrist, everybody.

So here we go. This is why this this was so special for me. Because. Yes. Please take us back to your home emirate. It was a very healthy lifestyle. You know, we had a lot of exercise.

We hiked in the mountains. There was not a weekend in summer and fall that we wouldn't hike into the mountains. It was not a weekend in winter where we didn't go skiing or cross-country skiing.

We exercise. We trained for being in good shape for the skiing in the in the summer. So a lot of physical exercise, a healthy diet. At that time, I was still eating meat, but not like one time a week.

It was one time a big fish. It was, I mean, there were sweets. You know, people always say, and particularly because my family business, the business of my family was a confectionery business and chocolate factory.

So I was exposed to a lot of sweets, but not in high quantities, you know. So we used sweets not to eat when you were anxious or to decrease your depression.

It was like a small piece of something sweet at the end of the dinner or at the end of the meal. I think there's like the discipline. I mean, you had a whole factory full of, you know, chocolate.

How did you and your siblings and cousins not, like, sneak off and gorge yourself? It's interesting. You know, it was it was just a part of the culture, this excessive, this gigantic ice cream, portions that you get here when you eat or

the dessert or, you know, this thousand or 2000 calorie desserts, that that didn't really exist.

This was not part of the culture. You know, you would you have small amounts for enjoyment. After after a good meal and, so coming back to the sauerkraut, you know, I mean, and so with the, with the refusing access to, to yeast, brewer's yeast, you know, which is many studies in the meantime.

Now, when we had a stomach ache. So two things we did. So one, we ate a lot of sauerkraut. My mother would say is for day to sauerkraut. And the other one to eat is go to the local brewery.

And the typical for Bavaria, there was seven breweries in the small town of 15,000 people. So I don't know who drank all this year, but it's a byproduct of beer making.

They had this foods, these, these, these cubes that you could go there and they would sell it to you. And so these were the two remedies, folk medicine remedies that we took for a stomach pain.

And I have to say, most of the time it's helped, you know, so it's, and I don't know if from that time. So in the meantime, the sauerkraut has sort of become the standard ingredient for our salads.

We also use it for cooking. Learned this from the French cuisine. I don't think I've ever cooked with sauerkraut. What do you do? You add it to all kinds of dishes that you make, you know, as a, as a, as a condiment, almost not not as a main ingredient, but as, as same with the salad.

We don't you just salad without a portion of sauerkraut in it, which adds, you know, and a good flavor to it. But also the good thing of a sauerkraut is it has virtually no calories, and it has also fiber.

So it has both the fiber from the, from from from, from the cabbage. But also. Flavor. I love how much flavor the fermented foods and, bring. And and I also love that you can make sauerkraut yourself.

It's such a easy serve. The, I think first and simplest ferment that people try. If you're interested in this, you can see the cabbage and salt in a jar.

It's amazing. And and you have to remember to let the gas out. Yeah. And to speed up the process. In the beginning, you you buy, you know, sauerkraut.

That is, that has not been, that has not been sterilized. So it has to be in the fridge section of your supermarket. And you take to take the juice of that sauerkraut and use it almost like as a, as a starter, you know, added to your cabbage and the salt and it's very easy to do.

I have to say, when not, you know, my wife and I, we're not masters in, in fermentation. I mean, there's really. This is a this is a safe space. This, this summit doctor merits. Okay.

I'm not a master fermenter, either. Everybody.

Ultra-Processed Foods and Gut Barrier Health

Anybody else listening who's not a master fermenter? It's okay. You don't have to ferment your own sauerkraut to take care of your mental health. Yeah, you don't have to.

But, you know, combining flavor, enhancement and health promotion is always a nice thing, you know, like with with. It's the best combo. I mean, it's a it's.

It's the best combo. And it could just. Be a fan of, Emily, you know, Emily Baker, who's, Emily Berner, rather. Who's, you know, a chef and, also a coach for both of us clinically.

But, boy, her ability to combine flavors, take flavors, take things like sauerkraut and fermented foods and kind of,

more leafy greens. Weave those into just delicious recipes.

It's just so wonderful. And to see that happen, just as you said, you know, you're adding in flavor. You're adding in nutrition. It's like win, win, win.

There is there is no kind of problem here. And, you know, I mean, you know, talking about Emily, I still have to thank you for introducing her to me. She's now also, you know, we both.

Have to thank Samantha l Crieff, one of the clinicians in our clinic, who introduced me so I can't take credit. Yeah. So wonderful person and and very gifted and and coming up with, you know, this custom customer.

So fun to think. Not to go on a tangent, but, Emily is an instructor at the Institute for Culinary Education, and I just love that she's influencing, whole, generation of chefs who are thinking about nutrient density and thinking about mental health and taking care of their own mental health.

So it's, it's wonderful. It's a really wonderful way to think about this. And now I love hearing about this original, Bavarian lifestyle and thinking about it's a great example for us all the data is talking about the Mediterranean lifestyle, but I think Doctor Mary is really helping us see getting back into a traditional lifestyle, whether it's our Varian, whether it's Moroccan, whether, it's, you know, a country, rural American culture where you eat real food more often.

Unlike a lot of what's happening in rural America today, those are great places where your diet is a lot like the Mediterranean. We don't just have to eat those Mediterranean foods.

It's about more movement. It's about connecting to nature. You hear so many elements of the mental fitness around the brewer's yeast and the sauerkraut, that, you know, just really wonderful for us all to hear.

And, doctor, I thank you so much for taking us back to the Bavarian Alps. What a treat. And kind of unexpected little sidestep as we think about mental health.

We think about depression and anxiety solutions. Now we're going to have to close up here in just a few minutes. But I want to, just. We've talked about diversity and the diversity of fibers in your diet.

We've talked about the diversity of fermented foods. We've talked about some of the science connecting the microbiome and the complexity of the microbiome with mental health and inflammation.

And then you give us such a wonderful understanding of how processed foods, ultra processed foods, the modern American diet, folks. However, we're going to say it how does actually influence the gut?

You know how beyond all the sensations in the hive, there is a loss of a mucosal layer? There's a way that there's not the protection that our epithelial cells used to get.

There's not the nourishment they used to get. Computer eight I'm wondering, as we close down if there are a couple of recommendations in general that you see with patients, maybe folks like me who you might.

That's okay. But, you know, I needed to be optimized to take care of this wonky brain of mine. And sometimes it's not so good. And I'm not sure whether I should tolerate dairy or not.

I'm wondering if you have some general ideas or general kind of in the diversity of foods, recommendations for us to optimize our gut health for depression and anxiety.

Well, I mean, obviously, let me say one sentence about the ultra processed food. So the, the there's a commission that has been put together, you know, that to, to look at the evidence, that ultra processed food is actually bad for our health and mental health.

And they come up with this conclusion. I don't know who these experts were with the conclusion, it is not scientific, not enough scientific evidence to make that statement that, you know, ultra processed foods, which is a good example, I think, of how industry major lobbying efforts have been, you know, thrown at this and have made this this commission members make a statement like this.

There's obviously tons of evidence for the components of the ultra processed foods, diet, how how bad it is and what consequences has. And, you know, on the top of the list is obviously sugar, the high sugar content and the lack of fiber, the lack of polyphenols.

I mean, all the the high salt content, so just just as one example of why similar things have happened, campaigns have happened against organically grown food that there's not enough scientific evidence for.

The study came out, out of Stanford, actually. And it turned out that, you know, people that were behind that report were on the on the payroll of, big, you know, food companies.

So we have to be very careful with these statements. But, Coming back to your question, it was not about the ultra processed food. It was about what I think of.

General, your recommendations. Again, I know they're hard to make generally, but thinking about this environment where I guess even if there's not scientific consensus, and I think it's a great point, Amarin, that just sometimes, you know, there wasn't great evidence that a food in any way influences depression until 2017, when the Smiles Trail was published by Felice Jacka and her group.

And so prior to that, now I'm certainly on record suggesting hoping, recommending that food and dietary pattern does influence mental health and depression outcome.

And so it's challenging where, you know, everybody listening wants to make their choices, I hope, based on good evidence, that's the, you know, best way of of selecting things we really have.

Our intuition is awesome for some things, but science is great when it comes to thinking about, you know, the prevention and treatment of these conditions and these symptoms.

But but maybe science is going to tell us astronomy, we want to get off the processed foods. That that said, I think we both agree that's our recommendation for your mental health, for your physical health, connecting to your food, having more of, interactions.

You know, you're also in Bavaria. We're talking about a family structure. You're out there running with with friends and family. You're making sauerkraut and eating it together.

It's this really wonderful, interconnected development you share. And so my question is really around, you know, helping people who are getting started in this world.

Maybe, you know, one great recommendation is adding more sauerkraut, but if there's some foods that kind of you in your household, then they out, are consuming, particularly in relationship to you thinking about, you know, your mental health and your brain health.

Practical Breakfast and Salad Routines

Well, I would say if I look at a kitchen now, there's one section that has all the ingredients for the breakfast, you know, multiple components, from, you know, flax seeds, chia seeds, different kind of berries.

Kefir, Greek yogurt. There's about ten components that make it into our, into a morning or breakfast bowl. And that again varies. Some are are stable components are, you know, we very like the.

You guys decide or just like one person make it one morning, you know, makes it one morning you make it the

other morning. The interesting thing is it's like your own, taste preferences.

I mean, they change over time, you know, like, you get bored with the blueberries. So you want something, something else that's more more flavor, like the, you know, the goji berries.

Different flavor or more economical flavor because blueberries. Go. In. But I love that point about boredom. It's just really huge. It's something that, you know, keeping it, keeping it fresh, trying new things.

It's it's a way of, you know, getting a little bit more dopamine out of your eating experience, a little bit more pleasure. So, but. People shouldn't forget them.

And this is very important. Hiddenness component of, of of eating, you know, and you don't want to kill it. You don't want to sort of be so strict. And so, you know, rigid about what you eat and that you're worried about, oh, if I don't eat enough of this.

So you have to really enjoy it. And I have to say both my wife and I, we love this breakfast ritual. Was you should see us in the kitchen adding all these components and then sitting and really enjoying it.

The same thing happens in the evening with the salad. So a big part of our evening of our dinners are these very complex salads that have, you know, up to 15 or even more components.

And they they vary almost every day, you know, so just between the breakfast and the and the dinner, we, we, we get plenty of the variety of these food items.

So I. I love that frameshift tour of a really train. I encourage anyone to try this out. You know, so many is noted, so many different diets and dietary plans.

But I love this one right it thinking around, hey, in the morning, you know, whether it's some yogurt or fear some muesli, some dried fruits and veggies, nuts and seeds, try that out every morning.

You're getting a ton of fiber. You're going to get fermented foods. And every evening I've heard, you know, a variety of versions of this. You know, the big salad.

And if you need a little seafood in there, boy, I love it. There's a little smoked salmon in there. You need a little bacon in there because you're a meat person. Okay.

But but it's going to be a lot of dark leafy greens. And then 10 to 15 of your favorite things. You know, if Emery's coming over, you should put in a little sauerkraut for heck.

And, and and it's going to and you're going to hear what you're going to see this one actually there's just a paper that just came out. I'm reaching for my phone just as I was walking over here.

There's a paper that came out about food nostalgia by a nutritional psychiatrist in Australia. Just completed her PhD, and it was about this that a lot.

And maybe it's the last one along with, you know, the wonderful things that I wanted to talk with doctor Mayor about fiber, the microbiome, diversity of microbes, organisms.

He also illustrates one of this really, really critically important parts of nutritional psychiatry, which is nostalgia that when you feed me sauerkraut, I'm like, you know, I've made sauerkraut once.

It's cool. It's great for me. Feed Emmer. And he sit at a table with him when he eats sauerkraut, you go someplace, you're transported into something that is so human.

It's. It's so much part of our collective experience together. And it really reminds the nostalgia around foods,

especially if you're a clinician listening or you're an individual where this is really resonating with you.

If there are some of these really kind of plant based, healthy foods that were part of your upbringing, part of your culture, that do have this nostalgic quality, oh, go get some of those.

I don't. Unfortunately, you know, that, that early programing or conditioning, has gotten lost in a lot of families, you know, with the family. For everybody listening can be really inspired by by you and by this episode to share that to pass that on.

And it's something that I'm even in my own family, I think is challenging. There's this kind of recreation of new traditions and embracing those, whether in our house, that's our our eggy pie with potatoes or kale, mac and cheese, or just a plethora of amazing lentils that my wife makes, you know, there's a set of food traditions that each family creates.

And so I really hope everybody takes this really special episode, the encouragement that I think a lot of, you know, and have gotten, but maybe never from an expert quite as qualified as doctor mayor around more diversity in your plants and in your fermented foods, but also helping us and reminding us to tap into those really meaningful foods from our upbringing.

And if you're creating a home and a household to step up to that, you know, little challenge or maybe even just it's acknowledging the food traditions that are already there.

And I'm really enjoying those. Doctor Amrin, mayor, we're going to link to your books, The mind Connection interconnected plates. If you're wondering where you recognize them from, folks who had a wonderful PBS special that just came out last year.

And so interviewing and talking, so many of the experts out there around food, around good health, around mental health and brain health, this has been another wonderful episode.

Thank you so much, doctor. Mayor, I look forward to seeing you really soon. Everybody enjoy this talk. Think about it. Take these lessons. Make them part of your mental fitness plan.

I look forward to seeing you in the next episode. Thank you so much. Thank you drew. Always a pleasure.