Genius Foods for Brain Health and Body Health

Heather Sandison, N.D. interviewing **Max Lugavere**

Heather Sandison, N.D.
Welcome to the Reverse Alzheimer's Summit. I'm so excited to have Max Lugavere. He's a filmmaker, health and science journalist and the author of the New York Times bestseller "Genius Foods: Become Smarter, Happier, and More Productive While Protecting Your Brain for Life." You can understand why I've invited him to the summit. He's published this book in multiple languages around the globe, helping other people improve their cognitive function through food. He's also the host of the number one iTunes health podcast, The Genius Life. Lugavere has appeared regularly on the Dr. Oz Show, The Rachel Ray Show and The Doctors. He's contributed to Medscape, Vice, Fast Company, CNN, The Daily Beast, and has also been featured on NBC Nightly News, The Today's Show and the New York Times and People Magazine. He's an internationally sought-after speaker. And he is given talks at South by Southwest, TEDx, The New York Academy of Sciences, among many others. His new cookbook "Genius Kitchen: Over 100 Easy and Delicious Recipes to Make Your Brain Sharp, Your Body Strong and Taste Buds Happy" is out now. I have a copy and it's been inspiring me in the kitchen for the past few weeks. Max, welcome.

Max Lugavere
Thank you so much for having me. It's an honor to be here.

Heather Sandison, N.D.
Thanks, so I wanna dive right in. Why did you write "Genius Kitchen"? You have a very personal story around this topic.

Max Lugavere
Yeah, so I didn't come to writing a book about nutrition and brain health via the traditional route. I guess, started as a journalist. I was a generalist journalist working for a TV network in the United States for many years. When my mother at a very early age started to display the earliest symptoms of what would ultimately be diagnosed as a form of dementia called Lewy Body Dementia. Which is a progressive incurable condition that feels akin to having Alzheimer's disease and Parkinson's disease at the same time. It's, you're wincing. It's like you have experience with it. It's a terrible condition.

Heather Sandison, N.D.
It's absolutely heartbreaking. And a lot of it is because you see the personality change so much it's a torturous way to lose a loved one. And so, I can imagine, yeah, this inspired you to make sure that other people didn't have to go through that suffering.

Max Lugavere
Yeah, so I mean, I come from an extremely small family. I'm the oldest child of three, and my mom is the most important person in my life at this point, right? So for me, having spent the past few years as an investigator of sorts. Not a PhD, not a medical doctor, but somebody who is really trained and had worked full time with this sort of unique skillset of knowing how to identify a question and then look for answers. I also had media credentials at that point, which had given me access to experts in the field that most civilians would not have access to. So, when my mom became sick, I exploited the skills that I had learned and my status as a quasi public figure to my family's benefit. And so I started to do research and I think a lot of people when they say that they're doing research it's for most of the time, it's a Google search.

So for me, as a layperson, I started there, I started reading anything that I could get my hands on, whether it was Wikipedia, Focused Books, Ted Talks, what have you. But then I started diving into the medical literature, the primary literature, the literature that's published on PubMed that now, thankfully, we live in a time where everybody has access to. And it wasn't easy to understand at first, but I mean this is a decade-long process that I believed very strongly that helpful literacy is something that we had outsourced. And that my experience at the time of feeling completely in the dark about what it was that my mom had, had, it was a consequence of that. And so I felt very empowered to learn and teach myself as much as I possibly could about the role that nutrition plays in brain health. And then I began reaching out to experts all around

the world. I actually had the privilege of visiting some the incredible clinics to see what they're doing there. And my goal really was, it was twofold. It was one, to see if there was anything out there that could be done to help my mother who was progressively declining with this condition. But on the other hand, it was to see and to understand if there was anything that I could do in my own life that could then prevent myself from ever having to incur what it was that my mom had developed. Because I realized for the first time that I had a risk factor. And this is not something that doctors tell you, right? Like as the patient wing person, when you're sitting in the clinic with a loved one with this condition, they're not like, they don't ever turn the spotlight over to you, right? And say, well, what are you doing Max? Now that you have this, you know, like you've hit the jackpot. You now have this risk factor, right? For this awful condition, what are you doing in your own life to lower your risk, right? But thankfully, I had the foresight to know that this is now something that I had to seriously start thinking about.

I also discovered that dementia often begins in the brain decades before the first symptom. So for me, this was not a condition that was an old person's condition. This is something that we all needed to be thinking about, no matter how old we are. And finally, I guess my mom was the first person at least that I'm aware of in our lineage that had a neurodegenerative condition. So, I realized that it's not even genes that determine one's fate, right? Because genes play a role. They certainly influence one's risk, but they're not determinant factors. So for me, it was really to understand and then ultimately to communicate out, to share, the various diet and lifestyle factors that might lower one's risk. So as to ensure or at least, yeah, to reduce the odds that one will develop this condition, whether or not one is genetically predisposed.

Heather Sandison, N.D.
So you came at this with the perspective of a journalist, which is typically highly skeptical, right? Like we've gotta convince a journalist that something is true and you also arrived that food can influence cognitive function and brain health. So, when I've talked to journalists, there's sort of surprised, and again, very skeptical that there's an interaction. And a lot of that I think comes out of the conventional paradigm that nothing can help dementias. And that food has nothing to do with it. Many people who have talked to a neurologist, will have heard that, will have heard a neurologist say, there's really nothing you can do. Go ahead and get your affairs in order. And so, how did you as a skeptic who is researching this arrive at that? Like, what was the moment?

Max Lugavere
Yeah, that's a really good question. Well, I mean, what I learned is that there are different kinds of risk factors for dementia. And most of what we know about dementia, we know about Alzheimer's disease, which is the most common form of dementia, right? Lewy Body Dementia is a much more rarer condition. We have not even scratched the surface with regard to the diet and lifestyle risk factors that might predispose one to that condition, right? Parkinson's disease is the second most common neurogenerative disease. But even for Parkinson's disease, I mean, we know tragic, a tragic smaller amount... There's a much smaller body of literature with regard to the etiology of that condition. So for me, it really was about, okay, well, what's gonna be good for the brain. What does the brain need to thrive as opposed to suffer in the modern world, right? And we know that when it comes to developing Alzheimer's disease, which is the most common form of dementia, as I mentioned, but not the only form of dementia, there are different kinds of risk factors.

And the two categories that I would highlight are the modifiable risk factors and the non-modifiable risk factors. So we know that a non-modifiable risk factor for Alzheimer's disease is your genes, right? If you are genetically predisposed, say, you carry the APOE e4 allele, that is a non-modifiable risk factor, right? You can't change your genes. You also can't change your age, which is still a very strong, if not the strongest risk factor for developing Alzheimer's disease and other neurodegenerative conditions, right? You can't change your gender. Unfortunately, if you're female, you have twice the odds of developing Alzheimer's disease as compared to men, right? So those are the non-modifiable risk factors. However, there's a slew of modifiable risk factors that range from environmental exposures, right? Whether or not you are spending adequate time outside and getting the requisite amount of vitamin D that your body and brain need to thrive. There is your diet, which is a modifiable risk factor.

Are you predisposing yourself with your diet to type two diabetes, which increases your risk for developing Alzheimer's disease anywhere between two and fourfold. There is your education level, your activity level, your sleep. We're now learning that sleep plays an important role in fortifying and protecting brain health. So, the reason why I started with food is because I had, had a lifelong passion for nutrition. I was really interested in nutrition and fitness growing up. In fact, it's one of the reasons why I started college on a premedical track. So I'd always had this passion for nutrition, and I had a sort of foundational knowledge with which to understand it. I wasn't coming into it in the dark. And I also realized that nutrition is such a powerful leverage

point, because it's something that we all do three times a day. We don't all exercise, right? We don't, unfortunately, we don't all treat sleep as sacredly as I feel like sleep needs to be treated, but everybody eats multiple times a day. And so for me, I started to look there and we also know that diet plays an important role in swaying one's metabolic health, both in terms of health and disease. And unfortunately, today we live in a time where metabolic illness is widespread. 9 in 10 adults have some component of the metabolic syndrome. So even though my mother was not obviously unwell, visibly she wasn't overweight. There is a very high probability that even somebody of normal weight is suffering from some kind of metabolic illness and food plays a large role in that. It's not the only factor that influences one's metabolic health, but it plays a large role. And so, I started there and I started looking at dietary patterns that reduce one's risk for developing these conditions.

We know that the Mediterranean dietary pattern is sort of the most well studied in terms of the mainstream medical literature. It's not the only dietary pattern that's associated with longevity, but it is the one that seems to be the most lauded by healthcare professionals in the United States. So I started there. And the Mediterranean dietary pattern has a few components to it that really make it stand out with regard to its healthiness, especially when compared to the standard American diet. Which is for the most part typified by a preponderance of ultra-processed, refined grain products, unhealthy oils and the like. So, I started there and then I continued to go down the rabbit hole and I've identified what I call the genius foods. So, 10 foods that are widely accessible, generally, low cost and are gonna provide your brain and body with the most bang for the buck with regard to building block molecules that can fortify neural tissue. We now know that the brain continues to grow new brain cells up until death, which is really important.

It possesses a characteristic known as neuroplasticity, which for many decades was considered an impossibility actually. But we now know that the brain can continue to shape itself throughout life. And also foods provide protector molecules that help the brain defend itself against stress. Now stress is something that's incredibly common and I'm not just talking about the kind of stress that we face when we are tasked with some think difficult at work, or when we're in a relationship that's gone sour. Stress comes in many different forms, whether it's exposure to environmental toxicants being under fed, being malnourished, an overly sedentary lifestyle. And so, there are actually molecules in our food that our brains use as a sort of armament against these stressors, which today are ubiquitous. So, we can sort of start there and then unpack what those foods are. But I'll leave it to you to decide.

Heather Sandison, N.D.
Yeah. Well, I wanna dive into the... You talk of about some of the controversial foods and so oils, fats, dairy, and then meat. And I think there's a lot of good discussion in the field and is certainly on the summit about whether or not those things are good for you or bad for you. And so, let's go there right away because I think it's so confusing for people. And I really appreciate that you break that down and help people make sense of whether or not they should be consuming these things. And if they are, what sort of things to think about when they go to select something at the grocery store. So, let's go through all of them. But let's start with the oils.

Max Lugavere
Yeah, so your brain is made of fat. That's I'm sure being mentioned by many, many people on this summit, but your brain isn't is made of any type of fat. Your brain is made of a particular category of fats called polyunsaturated fatty acids, which are particularly delicate and damage prone. Particularly, in the context of the brain, which utilizes 25% of your body's oxygen, right? In a container, the size of a grapefruit. So oxidative stress runs rampant in the brain. And it's actually a defining characteristic of many neurologic conditions, whether we're talking about Alzheimer's disease, Parkinson's disease, even autism spectrum disorder. And I think the fact that the brain is constructed of these fats, which are highly chemically unstable. I think that's one of the major features. One of the major factors that predispose the brain to oxidative stress. Polyunsaturated fats for that reason are an essential part of our diet. So essential fatty acids include omega-3 fatty acids, alpha-linolenic which is found in plants, or decosahexaenoic acid, DHA fat, which is found primarily animal products or eicosapentaenoic acid or EPA fat, which is also found in animal products. We also require omega-6 fats.

So omega-6 fats have been demonized by the wellness industry. And those include linoleic acid, which are found in nuts, seeds, vegetable products, things like that. And also arachidonic acid, which is found primarily in animal products. Now the brain needs both of these, relative trace amounts admittedly, but we need to consume these kinds of fats from our diets every day. Those are the only essential fats that we know that we need, right? We don't need to consume saturated fat. We don't need to consume monounsaturated fat. However, when you look at the food supply, monounsaturated fat is the most dominant fat found in healthy foods. It's actually the most common fat in nature where composed in many ways of monounsaturated fat in particular oleic acid, the myelin sheath is actually comprised of oleic acid. And when you look at some of the healthiest foods in the supermarket, they are at least 50% oleic acid. So, extra virgin

olive oil, which is a staple fat in the Mediterranean diet is about 85% oleic acid. You can look at the fat of wild salmon, which we know is associated with better cognitive health. It's about 50% oleic acid. So it's a very common fat found in nature. And it's actually named after the olive, which is when it was first identified. Polyunsaturated fats are also found in nature. And wherever you find polyunsaturated fats, monounsaturated fats, saturated fats, they all tend to be found in whole natural foods to varying proportions, right? Like you're not gonna see a natural food that is completely lacking in saturated fat. Wherever you find fat, you'll find a little bit of each type of fat in natural whole foods. And polyunsaturated fats also quite healthy when they're found in whole foods, right? Wild salmon is rich in polyunsaturated fats. We get DHA fat and EPA fat in the fat of wild salmon. Also in fatty fish like sardines and herring in grass fed-beef you get a tiny amount, but significant nonetheless of omega-3 fatty acids.

And you also get omega-3 fatty acids in grass-fed beef. You can, there's no food that doesn't have some proportion of all of the fats, right? The issue with cooking oils is that the food industry has created these high smoke point cooking oils and has suggested that they are healthful alternatives to fats that humans have been using for hundreds if not thousands of years, like extra virgin olive oil. And these oils haven't been in the human diet for more than 100 years because we hadn't had the chemistry labs to create them. And so the oils in particular that I draw people's attention to are the refined, bleached and deodorized grain and seed oils like corn oil, canola oil and soybean oil. Now, a fat is not a fat. There's a range and they all differ in terms of their susceptibility to this process known as oxidation. And as I mentioned, polyunsaturated fats are the most damage prone. They're the most prone to this process, which is essentially a form of chemical degradation.

It's aging, right? When you slice an apple and you leave it on the counter and it turns brown that's oxidation, right? Nobody would look at a brown apple and say, that's a fresh, healthy apple, right? That's oxidized, it's oxidized, it's rusted. That's essentially what it is, right? An avocado, when an avocado turns brown due to the exposure to oxygen, that's oxidation, right? So this happens to oils. This happens to fats, fatty acids that we consume, right? And the most prone to this oxidative process are the polyunsaturated fatty acids. Now when found in whole foods like nuts and seeds and wild salmon and grass-fed beef, they're bound by nature with antioxidants, right? So these antioxidants that are naturally found in these foods protect those fats. Our own bodies produce antioxidants, right? So these fats are guarded by a network of antioxidant chemicals, whether it's glutathione, which we produce in our bodies or vitamin E. Which is

actually an essential nutrient. We don't produce that. But generally, wherever you find vitamin E in nature, wherever you find polyunsaturated fats in nature, you're gonna find vitamin E.

Heather Sandison, N.D.
I want people to know, like if I'm standing in the oil aisle at the grocery store and there's coconut oil or avocado oil or olive oil or canola oil, I think you already mentioned, which do I choose? How do I use them?

Max Lugavere
Yeah, so olive oil is, there's this weird hypocrisy. I think, I mean, I would go so far as to call it hypocrisy within the medical and nutritional orthodoxy that lauds the Mediterranean dietary pattern for its protective effect against cardiovascular disease and neurogenic conditions. There's this like we love the Mediterranean dietary pattern, which the only oil that they use in legit Mediterranean homes and kitchens is extra virgin olive oil. They're not using canola oil. They're not using soybean oil. They're not using corn oil. And yet, it's the same medical and nutritional orthodoxy that within the same breath will praise these cooking oils, right? And, I mean, I think it really does have to do with money the fact that a lot of these oils they're studied and funded by these mega food conglomerates that produce them. The American Heart Association received its early initial funding via Proctor and Gamble, which produced these oils. So it really is, I mean, it's a complete irony. So when you're in the oil section of the supermarket, what I want people to look for is extra virgin olive oil or avocado oil.

Those are the two healthiest oils. There's a robust body of evidence to show that liberal consumption of fats like oleic acid, which is abundant in extra virgin olive oil and avocado oil are really beneficial from the standpoint of the brain. And you'll see this when you buy extra virgin olive oil, when you buy avocado oil, they're protected in glass, The manufacturers have a reverence for these fats because they know that they're so beneficial. They're so tasty, right? When you buy the grain and seed oil, the canola oil, the corn oil, the soybean oil, you find them in clear plastic. It's like, they're these dirt cheap high margin oils that are stored in plastic, which is ironic, because we know that they're so prone to oxidation. But nonetheless, the containers that they're normally sold in allow light easily to pass through and heat. And so, I want people to steer clear from the canola oil, the corn oil and the soybean oil. Now they there's a range, as I mentioned. So canola oil has a much higher proportion of chemically stable oleic acid, healthy monounsaturated fat. And then you have oils that are much higher with regard to the

proportion of polyunsaturated fat, like soybean oil and corn oil. So there is some degree of danger when it comes to buying those oils fresh because studies show that by the time they reach our kitchens, they've already undergone a significant degree of oxidation because they're so delicate and damage prone. But I think the real danger, because I don't like to fear monger. I like to be, I mean, honest and transparent. I think the real, the primary danger, is when we over consume these foods in the form of fried foods and ultra-processed foods. Because as I mentioned, they're already damaged to some degree by the time they're quote unquote fresh, which is actually a misnomer in and of itself because these oils are so heavily processed to be created from jump from the get go. But it's the continued processing and the heating and the reheating that they undergo in the restaurant setting, for example, that makes them particularly dangerous. So it continues to accelerate that oxidation process. It creates a small but significant amount of trans fats. They already contain a small amount of trans fats, but the continual heating of these oils generates even more.

And trans fats, there's no safe level of trans fat consumption. There are different types of trans fats. So there are some trans fats that are produced naturally in ruminant animals. Those are different from the industrially created trans fats that are found in foods that contain, for example, partially hydrogenated oils, which thankfully have been banned, but those kinds of fats. Yeah, but those kinds of fats still are found in these grain and seed oils. Again, a small amount. But if you're like the standard, if you're somebody on the standard American diet, who's consuming tablespoons of these oils every day, soybean oil is now the most commonly consumed fat in the standard American diet. You are consuming a significant amount of these fats, right? We know on labels, if there is fewer than 0.5 grams of trans fats in a serving, it doesn't have to be labeled. They can say zero grams of trans fats. But if you're consuming multiple servings of these oils on a day to day basis, which your average American is. Then your intake of trans fats, manmade, artificially produced trans fats is no longer gonna be zero. Once you get over that 0.5 gram threshold.

Heather Sandison, N.D.
So this is an Alzheimer's summit. So we have to talk about coconut oil and MCTs, medium trained triglycerides. So what is your stance there?

Max Lugavere
So I think, well, there's really interesting research on medium change triglycerides, which are found in coconut oil, right? It's a fraction of coconut oil that is unlike long chain fats and short chain fats. They have a different metabolic path when we consume them. They get transformed by the liver to ketones, which the brain, when available, will happily use as a fuel source. The research is equivocal. It's hard to really determine whether or not these fats are effective in the context of Alzheimer's disease. There is some evidence that they can be. And also when used as an adjunct therapy to a ketogenic diet. The issue with Alzheimer's disease is that the brain's ability to create energy from glucose is diminished by about 50%. Whereas its ability to generate energy from ketone bodies continues unperturbed. So it's a way of sort of keeping the lights on in a metabolically ailing brain that has excited researchers.

And I think provides a degree of hope, right? Does this mean that I'm saying that everybody needs to be on a ketogenic diet or be integrating MCT oil into their diet? No, that's not what I'm saying, but I think that the therapeutic potential is very exciting. And particularly, with a condition where there is so little hope. I think that this is an area that we need to continue to explore and continue to research. From the standpoint of cooking, I think coconut oil can be certainly utilized. It can be healthy in moderation. It is a fat that it's a tropical fat that for some people will drive up levels of LDL cholesterol and ape OB in general. And so, it's not something that I think people should be swimming in, essentially. The two most helpful fats that I like to endorse. The primary fats that I use. Are extra virgin olive oil and avocado oil. But if I were for example, suffering from some kind of cognitive decline myself, I would probably give a ketogenic diet a try and would probably use supplementary MCT oil as an adjunct just to drive my levels of ketones up even higher.

Heather Sandison, N.D.
That's what we recommend. And what we see clinically helping is a ketogenic diet is one of the fastest ways to turn around cognition when we measure it.

Max Lugavere
And I'll add within the context of neurology, the ketogenic diet is not a fringe diet. This is a diet that's been studied for the past century because it provides relief to certain forms of epilepsy. So there are some people within the nutrition community and even within the neurologic community that shun the ketogenic diet as a sort of fringe diet, which is complete

misinformation. It's not, within the context of neurology, it's something that we have to be talking about.

Heather Sandison, N.D.
And then the context of ancestral diets as well, we evolved to go back and forth from burning fat for fuel, and then burning sugar for fuel, not being in glycolysis or burning sugar for fuel all of our lives. And so our brains are certainly programmed and designed to burn fat for fuel, as well as the rest of our body. So dairy, dairy is a big one. So many people are confused about whether dairy is going to increase inflammation. Is this gonna help me? Does it have good protein and good fat that I need? Tell us how you decide if somebody should be adding dairy or eliminating it from their diet.

Max Lugavere
Yeah, I love this question. My views on dairy have evolved over the years. I think that if you are a person that is not allergic and you have lactase persistence, meaning you're not lactose intolerant. I actually think that dairy and particularly full fat dairy can be quite a helpful food. When you look at the purpose of dairy, what dairy is meant to do it's to grow a neonate, right? But the organ that's under the most rapid growth and organization in the postnatal state, is the brain. And so when you actually break apart dairy and look at what its constituent molecules are, I mean, there are some really interesting compounds in there that directly support brain health. There was actually a study recently, an animal study, that found that vitamin K2 it helped to support the cognition of aging rats as an animal study.

But this wasn't like an Alzheimer's model. This was like rats over 17 months were given vitamin K2. The primary source of vitamin K2 is in full or a primary source of vitamin K2 is full fat dairy. So it helped protect their brains. It improved their cognitive function, when compared to controls. When you look at the types of fats found in full fat dairy, they're bound by something called milk fat globule membrane. Milk fat globule membrane is complex. It's sort of like a bubble that encapsulates the triglycerides in dairy fat. It wraps them in a complex of proteins and phospholipids that actually can directly support brain health. Phosphatidylcholine is found in milk fat globule membrane, as well as sphingomyelin, which is an important structural component of myelin, right? So there are all these like interesting, unique molecules in there that could plausibly help support an aging brain. And there was actually a study. It was a food frequency questionnaire-based study, which we know that those are not the most rigorous

forms of nutrition research to do, but I came across it because it was published by Auriel Willett, who's a brain health nutrition researcher. Whose work I've been interested in for some time. And he found that among all dietary components, the consumption of full fat dairy was associated with better cognitive aging. Now, we know that many people around the world about 75% are lactose intolerant, but I think if we're consuming foods like heavy cream, hard cheeses, fermented dairy, like kefir, yogurts and things like that. There's actually a lot less lactase, or I'm sorry, lactose in those food products. And so, I think that there is good reason to integrate them into one's diet. The one dairy product where I think, and really kind of illustrates where my views have changed. I think that butter is a food that we need to recognize is not made by nature.

It's made by humans and butter lacks milk fat globule membrane. And I think this is one of the reasons why in clinical research, you see that heavy cream actually has a neutral effect on one's cardio metabolic profile. Whereas butter actually can increase lipids like LDL cholesterol. And I think it's because of the disruption of this milk fat globule membrane. So, even though they both start out from the same origin product, heavy cream, I think that heavy cream is something that's actually perfectly healthy and possibly can even play a bit an official role. But butter to me is something that I've sort of relegated to an indulgence, and I still will consume in moderation, but it's the heavy cream that it's that milk fat globule membrane that I think is so important to preserve.

Heather Sandison, N.D.
And then dairy, my understanding is that dairy in combination with sugar becomes particularly dangerous. So this is like your ice creams and your milkshakes and that kind of thing. When you combine the fats with the sugar, do you have any thoughts about how to kind of make sense of that or like coffee, right? People put butter in their coffee, if you then add syrup and then add more sugar to that, that's when you run into issues.

Max Lugavere
Well, it's not that there's a synergistic effect that butter sort of put, or that dairy potentiates the effect of sugar. Sugar is empty calories. And most people have some degree of glucose intolerance, right? Insulin resistance. And so, for those people eating low-fat or fat-free dairy, that has a lot of sugar or even full fat dairy with added sugar like ice cream. I mean that just typifies the standard American diet, right? High fat, high sugar. It's not that dairy has a, there's like a magic effect of dairy that when combined with sugar is dangerous, it's just that added sugar is

empty calories. And it's added sugar consumption is a proxy for junk food, right? When people who consume more added sugar, they're consuming more junk food. Ultra-processed, hyper-palatable junk food. And when we look observationally, we see that people who consume... It's people who consume full fat dairy have better cardio metabolic health. They have lower risk of cardiovascular disease. They have lower risk of type two diabetes when compared to people who consume low-fat and fat-free dairy. Now that could be because low-fat dairy and fat-free dairy has all this added sugar in it. So there are confounding variables there. I do think that there's a role for low-fat dairy in particular, with regard to Greek yogurt. I think low-fat or fat-free Greek yogurt is actually, and sugar-free Greek yogurt is actually a great food. It's a pristine protein source. It's you get a lot of protein for a very low calorie serving, but in general, I would be mindful of the added sugar in one's dietary pattern overall. It's not necessarily...

Heather Sandison, N.D.
I there's a study that I had read. I'll share it with you. But it's essentially when you combine the high fat high sugar within about 30 minutes, it leads to vascular spasm. And so, it does put people at risk directly for increased cardiovascular events. Like almost immediately within about 30, 40 minutes. So, I'll share it with you, but it's super fascinating stuff. And being mindful of, yeah, just these combinations of foods, but also the amounts, right? Just how much sugar, how much fat, and then red meat. So, let's go on to red meat because this is also a very controversial one. Lots of people have different opinions about, so I'm curious where you stand.

Max Lugavere
Yeah. So red meat, it is controversial. And the research on red meat is equivocal. It's not really very cut and dry. Observationally, which is one of the primary tools used in nutrition science. We see that people who consume more red meat have worse health outcomes, right? We see that they have observationally worse cardiovascular health, worse brain health. But what we have to understand is that correlation doesn't equal causation, even at the population level. Red meat is an, especially at the population level, red meat is associated with smoking. It's associated with sedentary lifestyle. People who consume more processed meat, they're eating more fast food, they're eating more chicken nuggets, they're eating more subway sandwiches, they're eating more hot dogs, right? It's a big problem. And it's a huge confounder when trying to assess whether or not meat plays a role in a health-optimized diet. When we look at randomized control trials, which are the kinds of trials required to prove cause and effect, we see no evidence that red meat is unhealthy. In fact, we see evidence to the contrary. We know that red meat

provides a pristine source of highly bioavailable protein, highly bioavailable micronutrients that play a particularly supportive role to brain health. Like zinc, like vitamin B12, like creatine. And so, I think that we have to be mindful of the fact that we have to be mindful of what's called a healthy user bias, when trying to determine where meat plays a role in our diet, right? People who consume more meat generally at the population level, as I mentioned, more fast food. People who consume more whole grains, more vegetables, more fruit, more organic fruit, more, you know. You could take a grain like quinoa, which is something that if you know how to pronounce quinoa, that says something about your overall interest in health and wellness, right? So, nutrition science is mired by healthy user bias. Now that we're getting better at performing these kinds of observational studies, we see that once diet quality is high.

There is no unhealthy effect that meat plays. We know, in fact, that meat is really important from the standpoint of the brain, particularly in the developing world. We know that people who are deprived of red meat, they have worse health outcomes. They have worse, when they're young and healthy, they show reduced cognitive function, reduced signs of mental health on the playground for children. Charlotte Newman is one of the researchers who did a seminal study out of UCLA showing us that when children given supplemental red meat in a randomized control trial, they had improved cognition. So yeah, there's a lot of different, I think, kinds of evidence that we could point to that support my view that red meat is additive, when it comes to brain health. Again, it's controversial. Not everybody agrees with me, but I do think that it plays an important role.

Heather Sandison, N.D.
Well, and that's part of the summit, right? Is to have these conversations about things that are controversial and get the information out there. What do we know? What do we not know? What are the questions? And I think that this is maybe one of them. There's a lot of factors, as you mentioned and these biases. What about the type of red meat, the amount of red meat? So are there some variables in here that maybe can make red meat healthier for us?

Max Lugavere
Yeah, I think red meat should be grass-fed, grass-finished. So, 100% grass-finished red meat is gonna be better for you, better for the environment, better for animal welfare than grain-finished, grass-fed, grain-finished beef, which is by and large the primary way in which beef is consumed in the United States. I mean, most beef, 97%, if not more, of the beef consumed in

the United States comes from KFO systems. Which are controlled feeding operations that are unsustainable from an environmental standpoint, not good for the animals. I think it still needs to be said that even meat from that system is a healthier option for dinner than boxed mac and cheese. It still provides great protein. It still provides a highly bioavailable source of heme, iron, zinc, choline. And if all you have access to is grain-finished beef, you can just opt for leaner cuts, right? Because what a cow eats really primarily dictates the composition of its fat of its adipocytes, of its fat tissue. But if you're opting for leaner cuts of meat, it actually, the difference starts to shrink, right? When comparing grain-finished versus grass-finished beef.

One other thing that I'll highlight is that choline consumption is associated with reduced risk for cognitive decline and dementia. And choline can almost be used as a proxy to measure animal product consumption. It's found in plants, but it's found in a much higher amounts in animal products like beef and eggs. And people consume more choline, which is sort of B vitamin. It's an important structural building block of the phospholipid bilayer, which is important for neuronal membrane health. People who can consume more choline have about a 30% reduced risk of developing dementia. And choline is found most abundantly in animal products.

Heather Sandison, N.D.
And our medications like acetylcholinesterase inhibitors are focused on choline and maintaining the amount of acetylcholine, a form of choline in the synapse for memories. So, yeah, you see choline come up a lot and phosphorylcholine is what makes up that phospholipid bilayer and helps with cell structure, cell integrity, especially at the membrane level where cells are communicating with each other. And so eggs, choline, we think of, or I think of at least the first thing that comes to mind for me is eggs. So, what's a healthy consumption of eggs look like in your mind?

Max Lugavere
Yeah, well choline about 90%, according to the Institute of Medicine, 90% of adults don't consume the adequate intake for choline every day. So most people are not consuming adequate choline. But with one egg, I believe you get your full day's worth of choline. There's about 150 milligrams of choline in a single egg yolk. And eggs, I think are incredibly beneficial from the standpoint of the brain. I actually call egg yolks, a cognitive multivitamin. They're so rich in nutrients that the brain requires for good health. And egg literally is nature's... It's created by nature to support a developing brain. I mean, that's what an egg yolk is. It's rich in choline,

vitamin B12, zinc, a little bit of omega-3 fats. And it's no wonder that eggs are rich in cholesterol as well because the brain is rich in cholesterol. I'm not saying you need to consume cholesterol for good brain health. You don't need to consume any, the brain produces all the cholesterol that it needs via de novo cholesterol synthesis. But wherever in nature, you see dietary cholesterol, chances are that's gonna be a repository of brain supporting nutrients. And an egg yolk is a perfect example of that. Egg white's also highly bioavailable source of protein. And again, choline consumption and eggs are the top source of choline that I'm familiar with. Is associated with better cognitive health outcomes. So, I'm a huge fan of eggs. I don't place an upper limit on egg consumption. We know that from the majority of people, dietary cholesterol has no impact on serum cholesterol. This is something that it's like, it's a myth that needs to be put to rest. But within certain communities, you still hear over and over again that we need to be weary of dietary cholesterol. We really, yeah.

Heather Sandison, N.D.
So there's a theme that I'm picking up on and what we've discussed, and it's these highly nutrient dense foods that are basically mom creating the best nutrients so that her offspring can survive, right? So this was dairy, avocados, nuts, seeds, coconut oil, eggs. So this comes up over and over again. Is like, how can we get these highly nutrient-dense foods that are perfect for brain development. Also great for cognitive function for later in life. And then unprocessed is the other kind of theme that I'm hearing from you. So, what's one recipe that you really love that kind of puts all these things together or even like what's a breakfast, lunch and dinner that somebody could be inspired to make today.

Max Lugavere
Yeah, I love that. So, my latest book "Genius Kitchen" is actually, it's a two part book. It's a recipe book, cookbook, loaded with over 100 super easy recipes utilizing these foods, which are very easy to find. And it's also a wellness and nutrition guide. So distilling all of these ideas that we've talked about, but for me, yeah, it really is about I'm no longer as interested in like carbs versus fat or, you know, even like, even the conversation about plant based versus more carnivorous lifestyles. To me is less interesting. What we need to do, is we need to get people off of these ultra-processed foods, which now account for 6% of the calories that your average American consumes every single day. And getting back to the foods that we cook in our own homes. To me, that is the most powerful leverage point that one has. We know thanks to research that people who eat at home more, they tend to have better cardio metabolic health, improved

family dynamics, lower risk of having a high BMI, so lower risk of obesity, healthier body fat percentage. So, just cooking at home, I think, is so crucially important. And the reason for this is that when you cook at home, you get to use single ingredient foods and combine them in a way that your body will recognize, right? Like some of these ultra-processed foods. I mean, whether it's the industrial additives that are added in, or the fact that they utilize these what starts out as helpful foods, but then they're pulverized to a dust that takes your body no effort whatsoever to digest and assimilate with regard to like grains, for example. Whole foods, I think it's like, it allows your body to do the work. And there's something really ancient about cooking and serving food for friends and loved ones and seeing their smiles from across the table as they nourish their bodies, collectively. I think it's a really powerful thing.

For me, when I break my fast in the morning. Sometimes, I enjoy breakfast foods. I mean, I love eggs, as I mentioned. I mean, eggs are great food, but I love most meals for me center around some kind of high quality protein source. And the reason for that is that protein is the most satiating macronutrient. Above carbs, above fat, protein fills your body up. And this is for a few reasons. For one, there's the protein leverage hypothesis. Which stipulates that our drive for food is dictated by our requirement for amino acids. Also, thanks to research out of McMaster University, we also know that foods that tend to behind protein also are typically high in other important micronutrients and especially micronutrients that tend to be under consumed today. So, like grass-fed beef, it's a great protein source, right? But it's also rich in a number of other, it's not just protein, right? It's rich in zinc, it's rich in choline, it's rich in iron, it's rich in vitamin B12.

Wild salmon, it's a great protein source, but it's also a tremendous source of DHA fat. Our brains, there's an intelligence that's been baked into our genome. Our bodies know to seek these kinds of foods, right? And so every meal for me, centers around either gras-fed beef or some kind of poultry or fatty fish. And then I fill it out with vegetables, whether it's a baked, steamed, grilled, roasted veggie or a salad, I'm a big advocate of consuming a big salad a day. Research out of Rush University shows us actually the people who do this have brains that perform up to 11 years younger. So sometimes for a meal, I'll just have a salad and I'll throw some protein into it. So, I love doing that. When it comes to snacks throughout the day, I love whole fruit. Whatever it happens to be, I'm just a big fan of whole fruit. I think if, with the exception being hyper-palatable, ultra-processed foods, if it tastes good to us, I think it's something that we've evolved with, right? We've like, and fruit is nature's candy. And I think when you look at fruit, I mean, yes, bananas are bred today to contain more starch and sugar than ever before in human

history. But they're self-limiting also. Mangos, apples, things like that. There's only so many apples you can consume, right? Whereas in an ultra-processed food, you could easily consume the sugar found in 10 apples in a single serving. So, I don't really place any limit on whole fruit. And I also like to prioritize protein in my snacks as well. And that's where I'll reach for the Greek yogurt, like a good high protein dairy source, or even a whey protein shake. We tend to meet our protein needs so as not it to develop deficiency in the United States. But research is starting to show that even the amount of protein recommended by our governing bodies is insufficient to optimize body composition and metabolic health. So, I generally strive for about 0.7 grams of protein per pound of body weight for myself. If you're listening to this and there's a goal weight that you have in mind, you wanna use that goal weight, 'cause it's really ought to be 0.7 grams per pound of lean mass.

And that's just sort of an easy way of estimating what that should be for you. And then for dinner, I tend to kind of follow the same formula. It's centered around some kind of high quality protein source and vegetables, maybe some kind of tuber. I'm a big fan of sweet potatoes. You'll regularly find me consuming those. And I'll add that I eat a lot. Like I don't limit myself. I fill myself up and it allows me to maintain this sort of dietary pattern that I've figured out for myself. Allows me to eat a lot and maintain a state of relative leanness without becoming obsessed, without having to count calories, without becoming overly focused on macros, right? It's the prioritization of protein. It's the integration of fibers, vegetables, whole food, fruits, and the like. And that actually gives me a budget where if I wanna have a little bit of dessert after dinner, I'm able to and it works for me.

And again, I'm able to maintain a degree of leanness without I'm not in the gym three hours a day. Although I do exercise regularly. But it really is about prioritizing whole foods, optimizing my for satiety in these foods. Like identifying the foods that are gonna give you the most satiety with the lowest sort of caloric load. And those foods are fibrous foods. They're foods that are high in protein. They're foods that are hydrating, like whole fruits and the like. And it really, yeah, I found it to work for me. And at this point now, despite not being a clinician myself, I have the input that I've gotten from thousands of people all around the world who integrate these recommendations and seems to work for them as well. So I'm very happy.

Heather Sandison, N.D.
But we didn't talk about vegetables because they're not controversial. So, I hope everybody has the takeaway that like, vegetables, vegetables, vegetables, lots of greens, lots of veggies, whole foods, of course. And then the fruits, as you mentioned. I'm also curious about fasting. So, it sounds like you're eating typically three meals a day and not fasting. And yet, there's good literature that suggests that intermittent fasting or fasting is also helpful for the brain. What are your thoughts there?

Max Lugavere
No, I mean, I do intermittent fast in the sense that I don't eat as soon as I wake up. I will usually push my first meal to two hours after I wake up. Two or three hours after I wake up and I try to curtail my consumption of food to two to three hours before bed. So that gives me a bit of time-restricted feeding. Early time-restricted feeding which I think is what their literature seems to favor. So eating an earlier dinner and starting earlier in the day. So, I do do that. However, I don't let that interfere with my social opportunities. I think, when we're controlling for all these different variables in the clinical setting, it's easy to get patients to eat an early dinner and particularly when they have to go to sleep in a lab, right? But social connection is so important with regard to brain health, that if you're trying to eat dinner at 6:00 pm and that's precluding you from being able to have dinner with friends and loved ones, where 8:00 pm might be a more practical option, my preference would be to have the more social dinner. So that's generally what I do. However, I do know that eating an an earlier dinner tends to be better. But I think it's important for people to take note of the fact that your average American is eating food 16 hours a day. So any improvement that you can do on that, I think is gonna be beneficial. For most people, I think a 12-hour eating window and fasting window is gonna be really easy, right? I mean, if you can't fit all of your food consuming habits and constrain them into a 12-hour window from 8:00 am to 8:00 pm or 9:00 am to 9:00 pm, I mean, you've gotta really kind of like look at what's going on in your life because that should be super easy for anybody to do.

Heather Sandison, N.D.
And some of that late night eating is also like, kind of mindless, right? So it's bringing that awareness to our habits and our patterns and saying, okay, where can we optimize a little bit?

Max Lugavere
Absolutely. Distracted eating is also associated with about a 15% increase in calorie consumption. So, it's really important. It's a great point that you bring up to be mindful and to be present with your food.

Heather Sandison, N.D.
Right. So can Alzheimer's be reversed?

Max Lugavere
I can't say that it can be reversed at this point. We've never had somebody recover from Alzheimer's disease, unfortunately. And so that's why for me, I don't use that language. I tend to put the focus on prevention. I think it's so important to drive home the point that if you're cognitively healthy, there's so much latitude that you have. And there really is no better time to start integrating brain healthy choices than the present moment. I mean, you really have to start today because as I mentioned earlier in our conversation, this is a decades-long disease process. That by the time you receive a diagnosis, that process is already set into motion. So, I'm not convinced that we'll be able to reverse the condition. Although, I mean, it would be incredible if that blockbuster drug or intervention were to come around. I certainly would've loved to have had that degree of hope for my mother.

But unfortunately, I think what the research is showing is we really need to start... We need to really drive home this issue of prevention. And we can't just talk about brain health within the context of aging, right? It's gotta be something that we each are mindful of throughout our lives, right? How can we better care for the brain, our most vulnerable organ? So for me, yeah, it really is about, it really is about prevention. I hope that one day within our lifespans, within our lifetimes, we are able to use the R word within the context of Alzheimer's disease and other forms of dementia. But for me, right now, I think anybody listening to this prevention. prevention, prevention, prevention,

Heather Sandison, N.D.
I couldn't agree more about prevention and that we need to intervene at those earliest stages of cognitive change. And it's the least expensive. It's by far the easiest, it takes the least amount of effort. And I'm excited to convince you that reversal is possible because we see it all the time in our clinic, using Dr. Brenison's approach. And so, I think there is lots of reason for hope and we'll

publish our clinical trial this summer. And he has his 25 participant trial. And it's early, it's very early in the science around this and because it is a multifactorial intervention. These weren't approved by IRBs until just five, six years ago. And so it's taking time for us to get those randomized controlled trials, but Dr. Brenison in already recruiting for his. We have a follow up trial coming up in my office. And so, I'm excited to get the literature out there, get all that published so that more and more people can find that hope and be inspired to make these lifestyle changes is really what we're seeing. You're absolutely correct that there is no pharmacological intervention that shows reversal. Sometimes you can get some slowing of the disease process, But with an aggressive lifestyle intervention, hormonal support, as you mentioned, there's a lot of factors, environmental factors, hormonal factors, engagement factors, diet of course, exercise, sleep. When you aggressively treat all of these things, we do see reversal.

Max Lugavere
Yeah, and I hope I didn't imply that there's nothing that you can do if you have Alzheimer's disease. There absolutely are things that you can do. And I look forward to being convinced and seeing that research. I think you're doing fantastic work and I'm definitely supportive. So yeah, I think there is definite reason for hope.

Heather Sandison, N.D.
Well, I appreciate the skeptic that the journalists and the skeptic and you're right. Because, I share that. I wouldn't believe it if I wasn't the one seeing it with my own eyes. But this is what's exciting, right? Is that we're at the forefront of this. And we'll make like together, all of us working together to change the narrative around what's possible, we should be able to make Alzheimer's rare for our generation.

Max Lugavere
Yes, I hope so. Fingers crossed.

Heather Sandison, N.D.
Yeah, that's the goal. Tell us about your family. So your mom, your siblings, how are they?

Max Lugavere
Well, my siblings, we all have this risk in our family tree. My mother actually passed away about three years ago. Her life was tragic, particularly in the later years. I mean, it wasn't always tragic,

but she had for eight years, she had this form of dementia. And then she developed pancreatic cancer over the Labor Day of 2018. So, it was very sad and I miss my mom to death, but I'm grateful that her legacy gets to live on in this work that I've created and that it's helping other people around the world and that people are aware of her and know her name. Thanks to my books and my advocacy. So, yeah, it makes me feel like what we went through, what she went through, wasn't in vain. Would I give up everything that I've created to have her back in good health? Absolutely, in a heartbeat. But it really has motivated me in a powerful way to learn as much as I possibly can and to lead by example and to teach. And I'm grateful for her for that.

Heather Sandison, N.D.
Well, thank you for your passion and commitment, dedication to this work. We are grateful for it. And thank you also for your time for joining us today and sharing with our listeners, how to choose healthier foods. Where can our listeners find out more about you?

Max Lugavere
So, I just put out my latest book, as I mentioned, "Genius Kitchen: Over 100 Easy Recipes to Make Your Brain Sharp, Body Strong and Taste Buds Happy". It's available wherever you get your books. I host my own podcast called The Genius Life. So people can come over and listen to that wherever they get their podcasts. And I'm very active on social media. So come over and say hi.

Heather Sandison, N.D.
Excellent, thanks so much, Max.