

EPISODE 286

Deadly Fats Vs. Healthy Fats & Essential Brain Nutrients – With Guest Max Lugavere

Shawn Stevenson: Welcome to *The Model Health Show*. This is fitness and nutrition expert, Shawn Stevenson, and I'm so grateful for you tuning in with me today.

I've talked about this time and time again, just how important- if we're talking about transforming our bodies, if we're talking about achieving a greater level of success, we have to identify the organ that's responsible for controlling all of this amazing stuff that we're doing, whether it's focusing our attention, whether it's burning fat, the master organ responsible is your brain.

It's amazing what our brains can do, you know? Just for example in this context, you've got the hypothalamus, we kind of consider this master gland. It's controlling your ability to store and / or burn calories, it's controlling your body temperature, it's controlling sleep cycles to a large degree. You know?

It's kind of passing off duties to other organs along that HPA axis, your hypothalamic pituitary adrenal axis. Your thyroid is along there as well, but it's residing in your brain. It's like the master control center, and we're facing a crisis today.

We're seeing this radical incidence. We're seeing- I'm talking tens of millions of people every single year being stricken with these neurodegenerative diseases, and we have never seen such a rampant shift in our culture before, you know? It's just been in the last few decades.

And we've got to make it stop, we've got to do something about it.

Our guest today is somebody who's really stepping into that role, but also he's speaking to the younger generation about this, because we tend to think about brain problems - dementia, Alzheimer's - as something that's restricted to when we get older. But guess what?

We're seeing problems now younger, and younger, and younger. When you get this information, you start making these changes at a younger age, you can literally prevent any of those things being in your future, and that's what this is all about.

Alright so before we do that, listen one of the most potent foods for our cells, and there's more and more research coming out about this, is MCTs. Alright? Medium chain triglycerides.

There's different types of fats, right? But these MCTs, specifically MCT oil, is an incredibly valuable source of fuel, alright? So one of the great things about it, is that it doesn't have the normal processing of if you're trying to eat like salmon, which is a great source of particular types of fats.

Your body has to do jobs exchanging that currency into the currency of the body. It's like fish currency into human cell currency, alright? Whereas MCTs can essentially go directly to your cells to supply energy, alright?

It's one of those things that helps your body also to support the process of ketosis, which we're going to talk about today as well, which is a more cleaner burning fuel for your body versus glucose. Which glucose is alright, but if we want the premium, the glucose is just going to have- it's more just combustible like it's going to have more residue. Let me put it like that.

Alright? So this supports your body in staying in this kind of fat burning state versus being a sugar burner, if that makes sense.

And I love MCT oil, I've been using it for so many years now, probably about five years, and now I use emulsified MCT oils. They're like coffee creamers. I look forward to it every day.

And where I get them is from www.Onnit.com/model. Alright? So it's www.Onnit.com/model and you get 10% off their incredible MCT oil selection.

My favorite is the vanilla and the cinnamon swirl, alright? I love those with my coffee, alright? I love it. They've got strawberry, I like to do with like some almond milk and like some lion's mane tea.

Then they've got the savory ones they just came out with so you can mix those with salads, but just get this stuff in your body. Alright these MCTs are really, really powerful, and so many great things coming out in the research about them.

But don't be the last person to know about it, alright? Head over, check them out, www.Onnit.com/model for 10% off. Now let's get to the iTunes review of the week.

iTunes Review: Another five-star review titled, 'Amazing,' by BellaMia1982.

'Ever since I started my new job at a company that is fifty minutes away from home, I decided that I wanted to do something productive while in the car, so I downloaded a podcast app and started searching for health topics.

Your show came up immediately, and with no doubt, I began to listen and I was immediately hooked. Your show is really eye-opening, interesting, and inspirational.

I am totally addicted and I won't stop listening.'

Shawn Stevenson: Awesome, you found me! I feel like Dory, with a better memory though. Alright? You found me. I'm so grateful for that. And thank you for taking the time to leave me that review, I appreciate it immensely.

And everybody, thank you for heading over to iTunes and leaving these reviews. If you've yet to do so, are you forgetting? Do we need to work? Come on, let's go.

You can pause the podcast, leave the review, and come back. I truly, truly appreciate it. Please keep them coming, it means so much to me. Seriously guys, thank you so much.

And on that note, let's get to our special guest and our topic of the day. Our guest today is Max Lugavere, and he is a filmmaker, health and science journalist, and the author of the New York Times bestselling book, 'Genius Foods: Become Smarter, Happier, and More Productive While Protecting Your Brain for Life.'

Lugavere has contributed to MedScape, Vice, Fast Company, CNN, The Daily Beast, and has been featured on NBC Nightly News, The Dr. Oz Show, The Rachel Ray Show, The Doctors, and in the Wall Street Journal.

He's a sought after speaker and has given talks at South by Southwest, Ted X, and the New York Academy of Sciences, the Bio Hacker Summit in Stockholm, Sweden, and many others.

And now he's here to drop some science on *The Model Health Show*. I'd like to welcome to the show, my man, Max Lugavere. How's it going today, man?

Max Lugavere: Dude, it's going so well. It's such an honor to be here. I'm such a fan of the show, so I mean this is incredible.

Shawn Stevenson: Oh man, that means so much, man. And I'm a big fan of your book, like I've got this marked up. I've said this before about a couple other books, I could have dipped this in the highlighting fluid, alright? It's so much good stuff in here.

And you've got a great like ability to consolidate a lot of data, some of the things we've talked about on the show of course, in a way that is precise, backed by research, but also very digestible for folks.

But before we get to that, I think this might have a root in your history of journalism. So let's talk about your superhero origin story, and how you got from this kind of pretty successful career as a journalist into one of the top health advocates in the world.

Max Lugavere: Yeah, awesome. I mean you know, my background as you mentioned- I used to work for a TV network in the United States called *Current TV*, and that was my first job out of college, it was a very privileged position to be in.

I was in my early twenties and I got to really cover a broad range of topics; topics that I felt like were important and being under-told in traditional media. And this was sort of before YouTube really became as huge as it ultimately became.

So I took this position to be a- I took it with great responsibility and covered topics that were of interest to me ranging from music, to politics, to spirituality even, to health and nutrition.

And there I was a bit of a generalist. I liken myself to having been sort of like a stem cell, undifferentiated at the time. And I did that for six years, getting to work with the best of the best storytellers and journalists in the field, and I left in about 2010 to try to figure out where I was going to go with my career having basically gotten my-milked that experience for all that it was worth, I felt.

And I started spending more time in New York City, which is where I'm from, around my mother. And me and my younger brothers started to notice that it had seemed as though suddenly when talking to my mom who was fifty-eight at the time, blonde and spirited, that we were suddenly talking to a much older person.

It had seemed as if her brain's processing speed had downshifted, and as somebody with no prior family history of any kind of neurodegenerative disease, and certainly not able to chalk up what I was seeing to aging because my mom wasn't exactly a picture of a person succumbing to the ravages of time, I became really interested in learning what was going on with her.

And so that led to me spending more and more time in doctor's visits with my mom, culminating ultimately in a trip to the Cleveland Clinic where it was there for the first time that my mom was diagnosed with a neurodegenerative disease.

And she was prescribed drugs for both Alzheimer's disease and Parkinson's disease, and it was later on that night in the Holiday Inn hotel room where we were staying close to the hospital where I actually started Googling these drugs for the first time.

And back then, seven years ago, I didn't really know anything about Alzheimer's disease or Parkinson's disease. I kind of thought that they were old people's diseases, you know? Something that was completely irrelevant to my world as a person in their twenties, and when I started reading about these drugs, terms started popping out at me that they have no disease modifying treatment, that nobody has ever recovered from Alzheimer's disease.

And I essentially had a panic attack, and it was one of the darkest moments of my life. I ceased being able to think about my career at this really pivotal point in my job

trajectory, and I just wanted to learn everything that I possibly could about how diet and lifestyle affect brain function and ultimately brain health and one's predilection for disease.

And just circling back to journalism, I really do think that journalists and scientists have a lot in common. As a journalist, you're trained to ask questions, to know how to find credible sources, to be a skeptic; these are all the same things that make a great scientist.

And so even though I wasn't trained academically, it really gave me a powerful skillset to try to figure out what was going on with my mom, and that really back in 2011 kicked off a journey that continues to this day and probably will continue until the day that I die, you know?

Shawn Stevenson: Yeah, man that's incredible and just a powerful catalyst. Thank you for sharing that story. You know, I saw some of that story in the book, and here you speak it out. I know that that was an incredibly tough situation but you turned it into something really positive, you know?

And I can definitely mirror that experience of like I'm getting this feedback from conventional medicine that they're saying that there's literally nothing you can do, and then being like, "Well if you're telling me there's nothing that I can do," you have to decide whether or not you're going to believe that or you're going to do something about it.

And taking that, and also like I became obsessed with finding out everything I could about health, you know? Because there's a lot of talk about disease, and how disease is created. They're awesome about that, you know? Some of our good friends.

But understanding health and how to create health in the human body is a whole other topic. And so one of the things I would love for you to kick off- actually you kicked off your book with this, and talk about like is there actually - whether or not - is there actually a way that dementia can actually be prevented and / or even improved?

And you kicked it off with the finger study, so can you talk a little bit about that?

Max Lugavere: Yeah, so the finger study is the world's first ever large population - about 1,200 people enrolled in that study, and it's ongoing - long-term randomized controlled trial which really provides the best evidence to date that cognitive decline needn't be an inevitable aspect of aging.

And in my book, I'm not just reporting on research that I've ready, I actually have been to both the Karolinska Institute in Stockholm, Sweden where the study is run out of, as well as the intervention is being run in Helsinki, Finland.

So I've been there, I've interviewed patients that are enrolled in the study, I've interviewed the lead researcher, and what's so fascinating about this study is that it shows that even in old age, if you have at least one risk factor for the disease, by adhering to a full battery of dietary and lifestyle interventions - so cleaning up your diet, exercising more, engaging socially with other people - you can significantly improve the way that your brain works.

Again, even in old age. So I mean this population in the intervention group compared to the control group, there was an 83% improvement in executive function, which is one of the most important-

Shawn Stevenson: Crazy.

Max Lugavere: Yeah, it's one of the most important aspects of our cognitive processes. Probably more important to a person's overall success than IQ.

And then there was a 150% increase in processing speed, which is one of the earliest domains to be affected by aging.

You know, when I first started to notice these symptoms in my mom, it was very clear that processing speed was affected, and it was affected dramatically in my mother.

But everybody typically to some degree has a decrease in processing speed as they age, and what's very interesting is that when you're young, and you take these steps, you can significantly improve your processing speed, which is again so critically important.

I mean I highlight- just to make the leap to another study that I talk about in the book, from University of Georgia, they found that when giving young college students, who are already thought to be at the peak of their cognitive prowess, certain nutrients - lutein and zeaxanthin, which are two carotenoids - they were able to achieve a 20% increase in their visual processing speed.

So our brains are so plastic, we know this. You've talked about this on the show many times, but rather than kind of keeping this notion of neuroplasticity within the realm of abstraction, I think it's like so important that people realize how this can actually improve their quality of life and their efficacy as people in the here and now.

Shawn Stevenson: Yeah, man that's so powerful, man. And that insight, just with those two compounds, zeaxanthin in particular. Let's just go ahead- I wasn't going to get to this yet, but let's dive in because this is called 'Genius Foods,' right?

So what are some of the foods? Or specifically you highlight one that is particularly great with lutein and zeaxanthin. So let's talk about some of these genius foods.

Max Lugavere: Yeah, so I mean just to take a step back, I think there are a ton of- first of all, there are many brain books coming out, and there's certainly a lot of nutrition books.

And so my goal was really not to write another book that basically just told you what not to eat over, and over, and over again. I think for savvy people today, like especially your audience, but people in general- like information is out there so I think people know that sugar for the most part is not good for us.

I wanted to really pave a road map towards better health by highlighting the foods that you really should be eating. Like eat these foods.

Research shows that people who have more dietary diversity today actually eat more junk foods. The healthiest people, according to a University of Texas study, basically buy the same narrower range of healthy foods on loop.

So what I call the genius foods are basically the foods - and I've assessed all relevant literature as it pertains to nutrition, and neurology, and even psychiatry - these are the foods that have a strong body of evidence that say that they boost the way that your brain works, and also help it fend off diseases of aging.

So you know, one of the foods that I talk about a lot, it's actually a category, they're dark leafy greens. So you know, one of the I think top tips that I make in the book is that people should eat a large salad, a large fatty salad every single day.

These dark leafy greens are really important. A Rush University study found that people who do this, who eat a large fatty salad or a large salad of dark leafy greens every day, have brains that look about eleven years younger on scans.

They have a powerful role in terms of keeping your brain youthful and healthy, and there's a number of mechanisms which might explain this.

So for one, they're packed with these two carotenoids, lutein and zeaxanthin, right? These carotenoids are really important in terms of protecting our eyes, we know this, that they help our eyes better fend off from damaging blue light.

So this is very important just in terms of your eye health, but there's a strong correlation between the accumulation of these carotenoids in your eyes and in your brain.

And in your brain it's been shown that these carotenoids can help your brain fend off oxidative stress, which is a key driver of these diseases that we're talking about, but also can exacerbate symptoms in other conditions like autism.

They can boost processing speed by again, up to 20% as shown, and they're very important. Also dark leafy greens contain an abundance of prebiotic fiber, which the

microbes that live in your large intestine love to eat. They're having a party every time you eat that huge fatty salad.

And I say 'fatty' because these carotenoids which are so important are only absorbed in your digestive tract when in the presence of fat. They're fat soluble nutrients. There are other fat soluble nutrients - vitamins A, E, D, and K.

They're all fat soluble meaning you're not absorbing them unless you consume them with fat. And fat soluble nutrients are particularly relevant to brain health because your brain is made of fat.

So it's about getting all these fat soluble antioxidants, and they're abundant in dark leafy greens.

I also talk about avocados and extra virgin olive oil, incredibly, incredibly important stuff. Actually, extra virgin olive oil, now that we've sort of (thank God) gotten past the 'fat is bad' mentality of the past couple of decades, the pendulum really is swinging the other direction where people are embracing fat, and that's a wonderful thing.

But I think that there's also a lot of misinformation out there regarding fats, and the right kinds of fats to eat. And so I highlight extra virgin olive oil as really being the culinary and dietary oil that has the strongest body of evidence to say that if we consume this fat liberally, our brains are going to work better, our cardiovascular system is going to be healthier, and we're probably going to lose weight while we're at it.

So extra virgin olive oil is the chief oil that I'm using in my kitchen and on my food. I use it as a sauce pretty much.

Shawn Stevenson: Yeah, let's actually differentiate with these different fats. So you go through this in the book, which is so important, so let's cover some of the basics with the different categories of fats.

We've got saturated fats, what else?

Max Lugavere: Yeah, so we've got saturated fats, which obviously full fat dairy, beef, pork, chicken, things like that. These are fats that are solid at room temperature.

When you feed a cow what it naturally wants to eat, which is grass, it's going to have less saturated fat in its fat by proportion.

So I don't think that we're meant to eat an excessive amount of saturated fat. Even though saturated fat is not the dietary demon that it was once thought to be, there's also no good evidence to say that chasing saturated fat has any positive impact on our brain health.

So you know, I make the recommendation that people should eat saturated fat liberally when it's contained in whole foods. Isolated saturated fats in oils and things like that, butter, coconut oil, I don't make the recommendation for.

I think that there's medicinal value to coconut oil, and definitely MCTs which we could talk about. MCTs are a fraction of coconut oil that provide a very clean burning fuel source to the brain in the form of ketones.

So you could either be on a ketogenic diet, which is how ketones are naturally produced endogenously, or in the body. But even without being in ketosis, you can consume MCT oil or even coconut oil, and there's essentially a push of ketones into the brain because the brain will use ketones when they're available.

The other kind of fat are polyunsaturated fatty acids, which people are now completely over-consuming because they're the predominant type of fat found in grain and seed oils, which the Western diet has basically become drenched in.

And these fats really were meant to be consumed by humans in trace quantities. About 100 years ago, polyunsaturated fats made up essentially zero percent of our caloric intake. Today they make up about ten percent because of the oils that we're consuming; canola oil, corn oil, soybean oil.

And these fats I think are pretty damaging because- well for one, they are usually skewed very heavily in favor of omega-6 fats which provide the biochemical precursors to our body's inflammation pathways.

So when we over-consume omega-6 fats, it's basically kicking our bodies into a state of chronic immune activation. And I talk about also in the book the value of getting healthy fats, and particularly omega-3's, in terms of what I call membrane fluidity.

So when we think about how our brains work, every cognitive process relies on the healthy functioning of neurotransmitters, right? Your audience probably heard of serotonin, dopamine, norepinephrine, acetylcholine; these are just a few of the couple dozen neurotransmitters that there are in the brain.

But the way the neurotransmitters work is they basically need to be heard by the ears of the neuron, and the ears of a neuron are called receptors, and receptors don't just sit statically on the surface of the cell membrane, they need to have the ability to bob up to the surface where they can hear the messages contained by neurotransmitters.

And so that's where membrane fluidity comes in. When you're consuming more omega-3's, your brain cell membranes have that property of being more fluid, whereas when we over-consume omega-6 fats, our cell membranes act more rigidly.

And so those receptors are less able to pop up to the surface to hear the messages that neurotransmitters contain, and that can potentially influence our thoughts, our memories, our executive function, things like that.

Shawn Stevenson: Yeah man, so crazy.

Max Lugavere: Yeah and so you know, I advise for getting polyunsaturated fats, even omega-3s, in whole foods; in properly raised animal products, in fatty fish, things like that.

We're probably meant to consume them in trace quantities, and also these are the only types of fats that really the brain requires. That's why omega-3s and omega-6s are called essential fatty acids, because they're essential.

Butter is not- saturated fat from butter is not an essential fatty acid. Omega-3s and omega-6s are essential. So where the brain is concerned, you really want to make sure that you're getting high quality omega-3s and you're not over-consuming omega-6s.

When you eat the foods that I call 'genius foods' in the book, that's being taken care of for you.

Shawn Stevenson: Got it, yeah. I want to take a quick detour here. So when it comes to the polyunsaturated, these are something that we- again you mentioned it, we're like drenched in as a culture. And I was just- it immediately popped into my mind, like even if you go to a health food store like Whole Foods in the hot bar, they're cooking with like canola oil still.

It's just like the information hasn't totally I guess saturated our world today, and so I want people to be more vigilant and just understanding.

Again trace amounts, if this happens every now and then, but take dominion over your home. Make sure that you're bringing in the right oils to make your food with at home.

And in particular, a monounsaturated fat, which is what we see with olive oil. So this is why it's one of these particular genius foods, so let's go ahead and talk about that now.

Max Lugavere: Yeah, and just to weigh in on the canola oil thing. Like you're so right. I did an Instagram post recently where I showed the- it's something like a dozen steps required to create canola oil, industrial processing steps out of its original seed, the rapeseed.

Whereas when looking at how extra virgin olive oil is made, which humans have been consuming for thousands of years, you make it by crushing olives. You know?

So I mean canola oil is this incredibly processed industrialized chemical. I would not even call it a food, it's more a food-like product, and it's very damaging.

They've isolated and identified up to 5% trans fats in canola oil.

Shawn Stevenson: That's crazy.

Max Lugavere: Yeah, monounsaturated fats are the third type of fat, and they are chemically stable. They are important for the brain, it actually- oleic acid which is a monounsaturated fat is the most abundant fatty acid found in extra virgin olive oil, and it's also what insulates our neurons. It makes up myelin, the myelin sheath in our heads, which is just fascinating and mind-blowing to consider that.

But yeah, so monounsaturated fat really does seem to be the fatty acid that we can consume liberally, and see positive health outcomes. So it seems to be the oil that is the most effectively processed by the liver, which is very important.

It seems to play a number of beneficial roles in terms of heart health, inflammation, and things like that.

So when it comes to the fatty acid, or the oil that I really think is like not only the safest but also the healthiest to consume liberally, it would definitely be extra virgin olive oil, followed by avocado oil, which is also very rich in these monounsaturated fats.

But interestingly, the most valuable aspect of extra virgin olive oil actually has nothing to do with the fats that it contains, but the phenolic compounds that have been shown to be as anti-inflammatory as low dose ibuprofen, which is really interesting.

Shawn Stevenson: Wow, yeah so you mentioned this compound that you get- it causes the spiciness, like if you get a really good olive oil. Can you talk about that one?

Max Lugavere: Yeah, so that's oleocanthal, and that is the compound found only in extra virgin olive oil, not in regular olive oil, but extra virgin olive oil. That actually leaves a very spicy feeling on the back of your throat. In fact, it might be so spicy that it makes you cough, and in fact that is how quality extra virgin olive oil is essentially rated.

They talk about these oils in terms of the number of coughs that they produce. So you can find one cough oil, two cough oils, and three cough oils, which means that it's like really spicy, and that actually is a sign that there's more of this powerfully anti-inflammatory compound in it.

So if you find three cough oil, that's an oil that you're going to want to use.

Shawn Stevenson: Wow, so olive oil is sort of like weed then. You heard it here first, Max said it, guys. I didn't say that. Alright? And you mentioned in here that oleocanthal may play a role in particular with eliminating and helping the brain to clear itself of amyloid plaque.

Max Lugavere: Yeah.

Shawn Stevenson: Let's talk about that a little bit. How does that play into neurodegenerative conditions?

Max Lugavere: Yeah so amyloid plaque is something that aggregates in all brains, and it's thought to be one of the defining characteristics of Alzheimer's disease.

Now you might not know this, it might be shocking, but Alzheimer's disease actually begins in the brain thirty to forty years before the first symptom.

And we all produce proteins in our brains and our bodies that are essentially waste compounds, and our bodies are generally very good at getting rid of waste. But you know, for some people, these proteins can aggregate and clump and form these plaques which are called amyloid beta plaques.

And amyloid was for many decades considered to be a likely causative player in the ideology, meaning the genesis of Alzheimer's disease.

And that's sort of unclear. It's sort of like what's kind of happened with cholesterol over the past couple of decades. It's looking more and more like amyloid is sort of- it's there at the scene of the crime when somebody dies of Alzheimer's disease, but it's likely not the causative factor because pharmaceutical- thanks to pharmaceutical failure after failure, we know that amyloid- even when we're able to clear amyloid from the brain, that doesn't cure Alzheimer's disease. Nobody's ever been cured of Alzheimer's disease.

So yeah, extra virgin olive oil really seems to stoke some of the processes in the body that are able to clean the brain of this plaque really.

It's been shown that extra virgin olive oil encourages a process called autophagy, and it's also been shown to help the brain better clear itself of these proteins that can aggregate and clump up and misfold and form these amyloid plaques.

So that's just one of the proposed mechanisms by which it really seems that extra virgin olive oil is protective in terms of brain health long-term.

Shawn Stevenson: Fascinating. Fascinating. I want to dive a little bit deeper here in this conversation about fats. I think this is incredibly important. You know, I've

touched on this several different times in different episodes of the show, but to really get more of like a master class understanding.

So we've covered the various types, I want to go a little bit deeper on these essentials, so let's talk about them. DHA, EPA, ALA, so let's talk a little bit about those and the difference between them.

Max Lugavere: Yeah, absolutely. So DHA fat is one of the most important building blocks for the brain. It basically gets embedded into our brain cell membranes, our neuronal membranes, where it helps to encourage what I mentioned earlier, membrane fluidity, an ability of the brain cell to properly hear outside signals, which is really important.

And DHA is found naturally in the fat of fatty fish. So wild salmon, sardines, these are all low mercury sources of preformed DHA fat. You can also get them for vegans and vegetarians, it's found in algal oil.

And our bodies have a very limited capacity to synthesize it when we give them the appropriate precursors. So one of those precursors is ALA, which is the plant-based form of omega-3 fatty acids.

Unfortunately, people are not very good at converting ALA to DHA. Women are about twice as effective at it as men, thought to be a means of facilitating more DHA to a future fetus potentially.

But in general, men can consume tablespoon after tablespoon of flax seed oil, which is very high in ALA, and really not convert much if any of that to DHA, and thereby not increasing the amount of DHA in the brain.

Certain people are genetically better at it also, so it's not just gender. People of European origin are less effective at it than people of African ancestry. Thought to be a consequence of the fact that over time, we started eating more fish and more land animals that had abundant quantities of DHA in it.

So I make the recommendation that people really go out and eat omega-3 enriched eggs, or grass-fed beef, wild salmon, sardines; these are all rich sources of DHA fat.

We don't have a huge requirement for these fats. I mean again, they're found in foods in relatively trace quantities, but you want to make sure that you're getting them, and you also want to make sure that you're not drowning them out with omega-6 fats, which we mentioned we're over-consuming.

EPA is usually found in tandem with DHA. It is what I call a whole body anti-inflammatory agent. So EPA is really good in terms of reducing inflammation, and this is key because inflammation really robs your brain of its optimal cognitive potential.

Inflammation is a brain drain when it comes to BDNF, or brain derived neurotrophic factor, which is a really important miracle grow protein that protects your existing neurons, promotes the growth of new ones.

So both of them work in tandem really to help promote neuroplasticity, and a brain that really works as well as it ought to.

They've done studies in children where people that are over-consuming omega-6s have worse attention and focus, and that by supplementing with omega-3s thereby sort of evening out that balance, their attention improves, which I think is really important and empowering.

And yeah, so I make the recommendation that we make an effort every day to get preformed versions of this EPA and DHA.

Again, you know plant-based forms of omega-3s, i.e. ALA found in walnuts, chia seeds, flax seeds, and things like that, I think that they're a nice addition to a diet that includes preformed versions of these fats, but they're not a replacement for them, because again, humans are very inefficient at converting them to their usable forms in the body.

Shawn Stevenson: Yeah man, thank you for sharing that. And I wanted to talk about this specifically because being in this field for a decade and a half plus for me, maybe it's twelve years ago, like hemp seed oil was hot on the streets.

Flax seed oil, you know? You're getting it from the refrigerated section to protect the oil, make sure that it's not oxidized, and all this good stuff, thinking you're getting the omega-3s that your body actually needs to do all this cool stuff we're looking for.

But the conversion process is significantly lacking, you know? So I just want people to be mindful of that. I'm not saying to just throw all the flax seed oils away, it could have some benefit, but we don't really know.

What we do know is that the conversion to the omega-3s that you really need for keeping your brain healthy is not very valuable, what's found in there.

I would suggest more so doing the whole flax seeds, ground them up, or the whole hemp seeds, but the oils themselves we don't really know if they deliver the value we're looking for.

We do know, however, that olive oil does, and he just stacks on stacks on stacks research in the book about olive oil, and it just like pumped me up to the degree like I went ham on the olive oil after reading that section that night.

So with that said, just to kind of segue, let's talk about what to look for with the olive oil, because we don't just want to go to the store and grab the random olive in the clear plastic jug. Right? So tell us what we should be looking for.

Max Lugavere: Yeah, so you want to make sure that you're buying it in either metal or glass, ideally darker colored. You know, extra virgin olive oil is very resistant to oxidation and rancidity, but nonetheless I think that it's probably wise to get it in a bottle that minimizes the chance that any of the fat contained therein is going to be oxidized.

So I recommend people buying it in smaller bottles because oxygen is obviously one of the chief catalysts for oxidation. So you know, the longer we can keep a bottle sealed and free of oxygen, I think the better.

So you know, I'm usually buying it in smaller bottles, glass or metal, darkly colored. When it comes to quality olive oil, a lot of people are freaked out over the counterfeit allegations.

So what I understand of that controversy is that it usually seems to be the case with oils exported out of Italy. So I really go for Greek olive oils.

I mean, I tend to look for those, and I also like to buy organic because these phenolic compounds, and we talked about one of them - oleocanthal - really are produced by plants as a means to fend off predators, and these predators for plants include everything from mold to insects to smaller animals.

So when we buy organic produce, they tend to have more of these phenolic compounds in them because they're natural plant defense mechanisms, and the minute we handicap a plant by dousing it with herbicides and pesticides and anti-fungals and things like that, we're basically handicapping their ability to- we're basically taking out the necessity for them to create these compounds.

Plants need a little bit of stress to create these compounds, just like we need a little bit of stress in the form of exercise, in the form of thermal stress, cryotherapy, cold showers, saunas, things like that.

And so I recommend getting olive oil organic as well.

Shawn Stevenson: Definitely.

Max Lugavere: And again, you can test the quality of your olive oil by tasting it and by letting it hit the back of your throat. If it creates that spicy sensation, you know that you're getting a quality extra virgin olive oil.

Other oils, light olive oil, and certainly the grain and seed oils don't have that same- don't give you that same sensation in the back of your throat.

Shawn Stevenson: Awesome. Awesome, great tips, man. So also I want to kind of pivot here a little bit when we're looking at these oils, specifically- we covered various types of fats, we covered the various types of essential fatty acids, and with omega-3s one of the first things that jumps to mind for most people if we're talking about getting the right amount- and I'm so grateful that you made clear like we can pretty easily get this from food, like whole food sources, if we're adamant about doing that each day, you know?

But you mentioned a fish oil supplement here. It says, 'According to a trial out of Berlin's Charite Hospital, in this study-'

Max Lugavere: Charite, yeah.

Shawn Stevenson: Charite, alright. I'm like crudité.

Max Lugavere: Charite.

Shawn Stevenson: In this study adults were given daily omega-3 supplements containing 1,320 milligrams of EPA and 880 milligrams of DHA. Now listen to this, guys.

After twenty-six weeks the researchers found that subjects taking the omega-3 supplements displayed executive function enhanced by 26% over the placebo group, who actually saw a slight decline.

Alright so do you recommend fish oil supplementation? Should this be for everybody? For some people? For sometimes? Talk about it.

Max Lugavere: Yeah, so it's a good question. I generally like to get my nutrients from food, but our food has changed a lot over the past hundred years. And certainly we don't- we're not always able to control our food environment.

So that being said, a high quality fish oil is one of the few supplements that I recommend, and you can buy cheaper supplements when it comes to vitamin D, things like that, but with fish oil it's an area that you really don't want to skimp.

Because we talked a little bit about how delicate polyunsaturated fats are, well omega-3s and omega-6s are both polyunsaturated fats, and they're very easily- they go rancid very easily.

And omega-3s are even more vulnerable than omega-6s, so when it comes to getting high quality fish oil, yeah quality is key.

And I actually recommend- well I'd definitely recommend refrigerating them, as well as chewing the capsules. This is not going to be for everybody necessarily, but I

actually like to taste the fish oil that I'm consuming because the same way that when you're eating fresh fish, there's no overt fishy flavor, and if you do- if it does taste fishy, you know that it's not the freshest fish.

The same thing could be said for high quality fish oil. There's not going to be an overt fishy flavor if you're getting the freshest fish oil.

So I mean if you've got fish oil in your house, taste it. If it tastes really fishy, spit it out. Make sure that the fish oil that you're getting doesn't taste overtly fishy. And then yeah, I recommend supplementing with it.

Again, I think you don't have to go crazy, but I usually will take about a gram to 1,500 milligrams of EPA, maybe 500 milligrams to a gram of DHA every day, and I skip that on days that I'm really being diligent about my diet, and that I'm eating fatty fish.

So I mean I happen to be a fan of sardines, which are really one of the top sources of these fats. If I eat a can of sardines, I'm not going to go crazy with the fish oil.

Shawn Stevenson: Yeah, got it. And so would you recommend then people going for the capsules versus the bottle that they keep refrigerated?

Max Lugavere: Yeah, that's a good question. Yeah, I don't distinguish between the two. I think as long as you buy it and it's- with the liquids I've seen them always refrigerated. So you know, I would just make sure that you're buying it from a reputable manufacturer.

I'm very diligent about that.

Shawn Stevenson: Perfect. Perfect. Great, great alright so let's talk a little bit about- you mentioned this earlier, but I want to talk a little bit more about it. It's one of my favorite foods, and actually I just did a little while back a talk for some high school students, and we're looking at helping them transition to the next level. You know, going to college, but also looking at what they can do right now.

And over the years, like I stopped speaking to kids in high school, middle school, elementary, which I used to do quite a bit, and it's because like I wanted to really get more of a global perspective and be able to help them, serve them where they are right now.

Because it's difficult for a kid to get this flip of a switch turned on in their mind, and then they go home and they have to eat ramen noodles because that's just what they have.

And so now, now we're creating more of like a blanket approach in the way that we're targeting certain schools, and speaking to certain populations of people, where

we can even maybe get the teachers involved, get the faculty involved, get their parents involved so we can have more of a holistic change, right?

And so with that said, spoke to these kids, one of the big takeaways that I wanted them to have- and they were very- like it literally changed them. Like they were just on fire to eat more fat after this talk.

And so that was one of the big takeaways was to make sure you're getting more high quality fats in your diet. I gave them all the different reasons why, and also gave them some examples.

And I asked specifically- we were talking about saturated fat, and we were talking about monounsaturated fats, and all that good stuff.

I asked, "Why likes avocados?" Right? No, I asked, "Who doesn't like avocados?" And so it was probably about 30% of the class, maybe 40%, which I was surprised it was that low because I know for me there's no way in the world I would eat avocado when I was in high school.

And so I shared with them like, "Listen guys, the first time I had an avocado, I was twenty-five. Alright? I thought avocado and guacamole were the same thing, and both looked disgusting."

And my first experience with avocado, true story guys, was on a pizza, alright? It was on some little pita pizza, avocado was on it, I was like, "Okay, I can do this," and then it kind of transitioned into a love affair from that.

So I wanted to share that, that for folks out there that are just like, "I don't know with the avocado, guacamole." I know we've got a lot of avocado fans out here, but it's a serious genius food.

It's one of those foods that has so much nutritional benefit, which Max is going to share with us, but trust me I've been on both sides of the fence of whether or not I'm even doing the avocado.

Now it's on Subway- like you see it driving down the highway on Subway sandwiches. McDonald's got the avocado special now, alright? They're trying to use this great food as an example of something- you know, you're getting some healthy thing.

So let's talk about why is this a genius food?

Max Lugavere: Yeah, I mean avocados are an all-in-one genius food. They're a potent source of the carotenoids that we were talking about before, which can boost the processing speed of your brain.

Those compounds, as I mentioned, require fat to be absorbed, so conveniently avocados are a rich source of very healthy fats, predominantly monounsaturated, which we talked about as being the fat that really there's a strong evidence base to say that we can consume this fat liberally and it seems to really benefit the health of our brains, our livers, you name it.

Avocados contain twice the potassium of a banana with a fraction of the glycemic load. Potassium is really important. Researchers now think that our hunter gatherer ancestors consumed about four times the potassium that we consume today, and potassium is really important in terms of nerve conduction, a healthy cardiovascular system.

So you know, potassium is critically important and it's also a wonderful source of dietary fiber, which feeds the microbes that live in our large intestine. So I'm all about that avocado. I try to eat a half to a whole fruit every single day. And yeah, they're wonderful.

I think as a kid, I too probably would have been a little bit freaked out by them, they can be a little bit slimy, but now that I know, I'm- I travel with avocados to be totally honest.

Shawn Stevenson: Oh that's- see, man? We're like brothers in 'cado, man. Because I do the same thing, like I literally throw avocados into my carry-on, you know? So man, that's awesome.

So with that said, so you said it's more like this kind of complete food, or the kind of true definition of a superfood in many ways. And one of the things that I shared with the students man, was the doctrine of signatures, you know?

And so this is kind of this strange field of nature science looking at- basically what that means is the signature of nature, and how every food according to the doctrine of signatures will tell you what it's good for in your body based on the way it looks, smells, tastes, or how the plant functions, alright?

So for example, walnuts. We know clearly now, they look like a brain, we know that they're quite possibly a potentially good brain food, got some omega-3s in there. We've got some plant sterols that can potentially help with that amyloid plaque situation, right? And again, it looks like a brain.

With avocados, here's the thing. Avocado was one of the like indigenous things, I think this was Peru, which means testicle fruit. Alright? They grow on trees in twos, alright? So it looks like a couple hanging down there.

But they're great for- to kind of like- you know, fats are essential for helping to build your sex hormones, you know? And so just like keeping all this stuff in context, and

just understanding like avocado has been around for just since the beginning in a way, you know? For centuries upon centuries.

That's a much better choice of getting your dietary fat than some kind of chemical laden processed crazy stuff that we see on the store shelf in the form of 'vegetable oil.'

Which by the way, it's not kale oil, it's not broccoli, alright? It's like corn, soy, all this stuff. It's not actually vegetable oil. So just keep that in mind.

Avocado, he just said half to a whole a day, is a good spot. You know, you can have this with- like you go ahead and share it. Like what are some ways that we can add avocados in?

Max Lugavere: Yeah, I mean I'll throw avocados into a bowl with a can of sardines. It's actually a recipe that I talk about in the book. You can get some- there's like a really delicious chipotle lime avocado oil based mayo, very tasty. You can throw that in the bowl with the avocado, with the sardines, it becomes really delicious.

I sometimes will just eat it straight out of the skin, sprinkle a little bit of mineral salt on it, scoop it out. It's so good. Actually that's the way that I eat it most frequently, I just eat it straight out of the shell with some salt on it.

Blend it up into a smoothie, you know? Have a really nice creamy consistency to your smoothies.

Yeah, you know, I think it's so important. But just in terms of the way that like I think about fat, it's not that- I never really think about like I've got to get more fat into my diet. I'm mostly vigilant about not getting the wrong fats into my diet.

I think that becomes a really important distinction, and especially today with the prevalence of ketogenic diets and things like that, which I think are beneficial and certainly in the Genius Plan I talk about my variant on a ketogenic diet.

I think people really are obsessed now almost with chasing fat, but one thing that I think is really important to be mindful of, and I talk to my followers about this, is that ketone production in the body is not a function of adding more fat.

You can eat zero fat and be in deep ketosis by way of fasting or starvation, which isn't fun. But ketone production isn't a function of adding more fat to the diet, it's really a function of reducing insulin by not eating many carbohydrates.

So when I'm thinking about like the fat that I'm eating, it's really making sure that I get whatever omega-3s that I need over the course of the day, and really not eating the unhealthy oils of today in the modern food environment. It's sort of like walking across a Vietnamese field, you know? Like in the sixties.

You don't- restaurants now are like cooking with these really unhealthy oils, and they're pretty much everywhere. Anytime you eat at a restaurant, it's you're taking a risk.

Shawn Stevenson: Potential danger zone, yeah. Man, let's just call it what it is, garbage fats. Alright? We'll call it garbage fats, alright?

So you know what? I love this statement, and maybe- I don't know if I came up with this, I think I did, I don't know. But avocados make everything better, alright? So we're just going to put that out there.

Whatever it is, makes it better. Omelets, better. Burgers, better. If we've got- we can make a great chocolate mousse, right? Blend it up with some high quality chocolate, man. Listen, avocados are one of my favorite foods.

So that's another genius food fortunately. There are so many good things that are also good for us. Let's talk a little bit about another one of these genius foods, and again there's a whole list of like the top ones backed by research in the book, but I want to talk about blueberries.

I don't think blueberries get enough love. Why are blueberries included as a genius food?

Max Lugavere: Man, blueberries are amazing. First of all, they're a low-sugar fruit. So I mean they satiate your sweet tooth, they've got that nice tart quality to them without being loaded with sugar like modern cultivated tropical fruit.

You know, you take pineapple or a banana for instance, I mean these foods are so- these fruits are so different than they were now as compared to a hundred years ago.

Meanwhile, blueberries- you know, they're rich in an array of what are called anthocyanins, these are the blue pigments that are also found in red onions, purple potatoes, things like that.

And these anthocyanins are powerful antioxidants. They've been shown to accumulate in the brain's memory center where they help shield it against aging.

In fact, people who consume more blueberries have brains that look about two and a half years younger on brain scans, so this is about- in this study, I think it was The Nurse's Health Study, they were consuming at least a serving a week of blueberries, brains that look two and a half years younger on scans.

They have shown in animal models as well as in human trials that they can actually improve memory function. So I'm always pounding blueberries if I've got to really be at the top of my game.

They also- anthocyanins also might potentially play a role in cancer prevention as well. This was shown with purple potatoes and colon cancer. So it's hard to tease out what aspect of the purple potatoes really were playing a role, but I mean yeah, blueberries are a really powerful brain food.

Shawn Stevenson: That purple color actually- you know, Max, I don't know if you've thought about this before, but just back in the day, it just kind of came into mind like what's up with these colors? Like what do they actually- what do they signify, you know?

And I think that it's a big parallel with the colors of different plants with the different antioxidants that are found in them in a strange way. Like antioxidants are colors in just kind of one of the assessments that I came with.

And that's- because if you look at that spectrum as we move over into the purples, and the really dark purples, and the browns even like with chocolate, you start to see the strongest - and red before that - the strongest sources of antioxidants.

It's like isn't that funny? Isn't that really interesting? And looking for those particular foods in that category. How many purple, dark purple, red, and brown foods are you getting in your diet? You know? And just even using that as a guidance for us to start making some decisions.

Max Lugavere: You're so right, yeah. I mean the carotenoids that we were talking about earlier, those are the yellow and orange pigments that are found in bell peppers and things like that.

These anthocyanins are blue and purple. You can look at chlorophyll which is green, chlorophyll is incredibly important. It's a wonderful source of magnesium.

Magnesium- actually chlorophyll and hemoglobin actually look very similar, with the difference that in our blood there's iron, whereas in the same compound in plants, it's magnesium.

So chlorophyll is a really wonderful thing to consume. We get it when we're consuming green vegetables, strictly the greens, and that's also why they happen to be such a great source of magnesium, which we know that 50% of the population is not consuming adequate amounts of.

So you're absolutely right, yeah. I mean you really ultimately want to eat the rainbow.

Shawn Stevenson: Yeah, definitely. Yeah.

Max Lugavere: And it's as simple as that.

Shawn Stevenson: Who said, "Taste the rainbow"? Was that Skittles? Is that Skittles?

Max Lugavere: Might have been, yeah.

Shawn Stevenson: So listen, guys. Don't just taste the rainbow, eat it. Alright? Not the Skittles, but with real food. You heard it here first.

So- and by the way, with the doctrine of signatures, if we're looking at blueberries, they look like little eyeballs. You know? And there are all these wonderful compounds in there that are great for your eyes, as Max has been talking about.

So there's one other food I want to cover, there's again so many I want to ask you about, and again you go so much more in depth in the book. But I want to talk about eggs, you know?

This is one that has gone in and out of favor over the years for not very good reason, you know? If you look at the research it's just kind of startling how much value the right kind of eggs can potentially have for people.

So why did you include this one as a genius food?

Max Lugavere: Oh absolutely. I mean it's ridiculous that over the past couple of decades, I mean we were told that eggs were unhealthy. Meanwhile nature doesn't make unhealthy fats, humans do. That's like one of the key takeaways that I want people to get from reading my book.

Eggs are such an important genius food, and you know, logically it makes a lot of sense because when you consider the fact that when an embryo is developing, the first structure to really develop is the nervous system, which includes the brain.

So you know, therefore an egg yolk is literally designed by nature to contain all of the best ingredients required to nurture a healthy developing brain.

So that's the reason why I think many people now consider egg yolks to be nature's multi-vitamin. And research shows that people that consume high amounts of eggs, not only does it not increase the risk of cardiovascular disease, that's been completely debunked at this point, that for the vast majority of people dietary cholesterol has no impact on serum cholesterol.

There's always an exception in biology, I mean there are people that are hyper absorbers and things like that, so I never use the term 'all.' I'm very careful not to say that these are one size fits all guidelines.

Everybody's different, we all have different fitness levels, different genes, things like that. But nonetheless, an egg yolk does actually contain every nutrient required by the brain.

I mean it's one of the best and most efficient ways of getting choline, which is a conditionally essential nutrient that we know that we need for it to create healthy brain cells.

It's the precursor to the neurotransmitter acetylcholine, which is really important for learning and memory. It's a top source of vitamin B-12. You also get in pastured eggs those same carotenoids, lutein and zeaxanthin. It's one of the reasons why- I'm just going back to pigments.

A pastured egg yolk looks much more orange than a conventionally raised chicken's egg yolk.

Obviously a wonderful source of protein and DHA fat, you know? Those preformed DHA fatty acids are the building blocks that your brain uses to create healthy new brain cells. Critically important, so I'm eating two to three eggs every single day.

Shawn Stevenson: Wow, that's really remarkable, man. There's so much there, so much value that it just kind of got thrown away. Like literally thrown away as people are buying egg whites, right?

And I did this, man. I bought like these egg whites in the little carton, right? Making my omelets like I'm being super healthy missing out on the most valuable part.

But I want to make a really clear statement for people about he mentioned how the greatest nutrients really are found in the egg yolk.

And by the way, the white of the egg is one of the most digestible proteins ever. Right? This is like we've got albumin, right? Super digestible and usable by the human body, but the yolk is where we get the real gold. Get that gold.

Alright so- but it is potentially- it can lose some of this stuff in the cooking process, right? So what is the best way for us to actually get what we're looking for? I mean of course you can scramble up some eggs, all good, but what do we ideally want to do so we can maintain the integrity of the fat that we're trying to get?

Max Lugavere: Yeah, so the one thing that you definitely don't want to do is eat raw egg whites, because that can create a biotin deficiency actually. It binds to biotin in the gut, and biotin is really important for healthy hair, nails, skin, other things.

And yeah, you want to cook your eggs. I'm not a big fan of hard-boiling them because the egg yolks do contain lots of delicate fats and look, there's a ton of antioxidants actually in egg yolks which can help protect those fats.

But if you like hardboiled eggs, I would say go for it, but I'm trying generally to keep those yolks a little bit more custard-like just so that I don't scorch them. The fats and cholesterol itself are vulnerable to oxidation.

And so when it comes to fats, you really want to be getting in healthy unadulterated fats. And so you know, I'm doing soft scrambles, soft to medium boiled eggs if that's your thing.

Again, eating a hardboiled egg is not going to- if that's what you like, it's not going to kill you. But yeah, just be mindful of the fact that some of the most valuable fats to the human brain are also among the most vulnerable, and what damages a fat are heat, oxygen, and light.

And so you just want to be really careful when treating these fats, and processing them. Because at the end of the day, cooking is a form of processing. We're able to process our own food.

Manufacturers aren't the only people that are able to process foods. We do this at home when we're cooking them. Any form of food processing is going to some degree degrade at least some of the compounds in that food.

On the other hand, it makes more- certain other nutrients more bioavailable. So I think at the end of the day cooking is a wonderful thing.

But yeah, just be cautious not to I guess overcook your eggs, would be my advice.

Shawn Stevenson: Got it, perfect. And also, we've got sunnyside up, over easy, poached, you know? And so, so many different ways that you can go for the eggs, but don't do egg whites, alright?

It's in the healthy section even when you go to a restaurant now. Like they've got the healthy little thing here, it's just like you get your egg white omelet and your steel cut oats and your organic orange juice. Congratulations, you have pre-diabetes.

You know, just be careful with this stuff, guys. Alright so one other thing I want to ask you about, and I'm so happy you included this in the book because this is something that people ask about all the time in regards to building muscle, and that's creatine.

Alright? But there's also a big role that it plays for our brain. So let's talk about creatine, man. Like why did you talk about this in the book?

Max Lugavere: I'm so glad you bring that up. See creatine is found naturally in fish, in red meat, in things like that, and most people that are in the fitness world are familiar with the well-demonstrated ability of creatine to boost athletic performance with relatively minimal side effects, if any.

It's got a robust research base behind it, and it's actually one of the first supplements that I discovered which really piqued my interest in fitness and nutrition.

But more than being just an athletic and performance boosting supplement, creatine is actually essential for healthy brain function.

In fact, creatine is found naturally in our bodies. We synthesize it and we also consume it, as I mentioned, in red meat. There's a mental condition associated with an inability of creatine to pass the blood brain barrier, and in research performed on vegans and vegetarians and omnivores- vegans and vegetarians, when given supplemental creatine, their cognitive performance improved.

So what this shows me is that getting creatine in our food is incredibly important for optimal brain function, and it's one of the reasons why I make the recommendation that people should be eating grass-fed beef as a brain food.

You know, just to talk a little bit about plant-based diets, when people make the switch to a plant-based diet, they tend to supplement with the one nutrient that they know that they're not getting in plant foods, and that is vitamin B-12, because that's an essential nutrient that we need.

You're going to develop a deficiency disease if you don't consume vitamin B-12, and usually that's that as far as picking up the slack for a vegetarian diet is concerned.

But actually there's a whole range of nutrients that I talk about in the book called conditionally essential nutrients, and these are nutrients, some of which we've identified, many of which I'm sure we haven't, that you might not develop a deficiency disease by not eating them.

I.e. like if you don't eat vitamin C, you're going to develop scurvy. If you don't get vitamin D, you're going to develop rickets. You might not develop an overt condition by avoiding these nutrients, but you're probably going to feel better and perform better when you have them in your diet.

So that's why I'm extremely skeptical of anybody who cuts out an entire food group like meat or fish, for example, from their diets, especially when those food groups have likely been around during the time in which our brains evolved.

And so creatine, yeah I think is one of those really important nutrients. It basically acts in the brain as an energy recycler. So your brain's requirement for energy is very constant. It uses 25% of your base metabolic rate is going to create energy in your brain, and creatine basically works to recycle ATP, which is really important.

It also does that in muscle as well.

Shawn Stevenson: Yeah, that's why it's so valuable. You know, we don't think about the behind-the-scenes. Like what is it actually doing? It's helping to recycle ATP, you know? Which is just fascinating that it's there to do that job, you know?

This is like the energy currency of the body that we talked about a couple times already, but being able to renew that. Like it's just like renewing money. Like you spend a dollar, that dollar comes right back. Like it's on a string or something, you know? In a way. In a way.

It's not exactly like that, but it's going to keep your body in a place where it can keep on performing and moving forward and growing, because even the process of exercise, right? You're breaking your body down.

It's part of the recovery process, it's helping your body to regenerate and come back better. So wow, that's crazy. And so yeah, you mentioned this in the book, the higher levels of brain creatine were correlated with better memory performance.

You've got several studies in here showing this, and also the study, like you mentioned. Folks who are vegetarians and vegans, not having a specific whole food source of this given a supplement, supplementing with the creatine, they saw a significant improvement in their cognitive function.

So this was twenty grams per day for just five days, you know? So keep that in mind.

Max Lugavere: Yeah, vegans and vegetarians- omnivores didn't see the same increase which suggests that just by eating meat, a little bit of meat in your diet, your basically brain is going to hit that saturation point where it's getting what it requires.

Just to talk a little bit about brain energy metabolism a bit, you know when the brain is creating energy out of glucose, that occurs at a cost. I mean the same way that when a car burns gasoline, it creates exhaust.

That occurs in the brain as well, and exhaust in the brain is referred to as reactive oxygen species, right?

So creatine, what's so incredible about it, is that it basically recycles ATP, basically minimizing the necessity of glucose essentially because when cognitive demands increase we actually start burning through creatine.

Creatine is there to basically recycle ATP. After ATP is burned, creatine donates a phosphate molecule, basically sacrificing itself to help your brain meet its energy demands. So it's an incredibly important nutrient, and whether through supplementing with it or simply just getting it in the form of whole food, I think that it's really important as far as the brain is concerned.

Shawn Stevenson: Awesome. Max, this has been incredibly enlightening, and just the way that you packaged up this information in the book is just like literally phenomenal, man. You did an incredible job.

And so if you could, final question, what is the model that you're here to set with the way that you live your life personally?

Max Lugavere: Oh man. You know, I think I'm just trying to leave the world a little bit better than it was when I came into it. You know, and I think we live in an incredible time where thanks to the tools of technology and the Internet, it's given rise to a whole new generation of healers and people like yourself, Shawn, that are really using their platform, and their skills, and their talents, and abilities to inspire a greater vision of life and humanity, I think that's really what it is that I'm trying to do, and what I think we all each are able to do in our own lives.

Whether it's that moment you're chatting around the water cooler with your coworkers, and you can tell them about that cool study that you read that might help them live their life in a somewhat healthier way, or launching your own podcast, or just being a little bit more diligent about how you use social media. You know?

I think we live in an incredible time where we're able to reach people in a way that is simply unprecedented.

And so that's what I'm trying to do. I'm trying to really- with my work, I see dementia every single, you know? My mom has dementia, it's something that is there in my life, it's heartbreaking, and I want to do what I can to prevent- if I can prevent one person from becoming a victim the way that my mom has, then I'll feel that I've done my job.

And you know, thankfully the same things that we can do that are going to help shield our brains and stack the odds in our own favor for once also make our brains work better in the here and now.

I think it's amazing that you can invest in your future selves and you can also improve your quality of life today at the same time. I mean there's no other investment that is going to pay those kinds of dividends.

So I'm just trying to spread that message, and do my part, and I feel so grateful that I've been embraced by the community, and yeah that's how I'm trying to live my life.

Shawn Stevenson: Love it, man. Thank you so much. Can you let everybody know where they can connect with you online, and where they can find your incredible book?

Max Lugavere: Yeah, thank you. So find me on Instagram @MaxLugavere. My book 'Genius Foods' is available wherever books are sold. You can go to

www.GeniusFoodsBook.com to get a free sample of it, but really go out, order the book.

As Shawn said, which I love, I'm going to quote you, you can basically dip the thing in highlighter ink. Yeah, just connect with me. I'm out there, and I'm available, and I would love to say hi.

Shawn Stevenson: Awesome. Max, you're the man. I appreciate you so much for coming on today. Thank you.

Max Lugavere: Thank you, brother.

Shawn Stevenson: Awesome. Hey everybody, thank you so much for tuning into the show today. I hope you got a lot of value out of this. Listen, these books are incredibly timely, you know?

A book like 'Genius Foods,' we need to cut off the bleeding. We need to stop the bleeding, alright? And we're in a position right now, and this is why I was so adamant in my shift about getting out and speaking to students again, because your brain health starts now, alright?

If you're in your twenties, if you're in your teens, if you're in your thirties, forties, fifties. Of course folks that are listening right now that are 'in your senior years,' it's not too late to have improvement, but I just want to make sure that the younger folks take this seriously because you don't want to end up being in that situation where you're not able to take care of yourself.

You know? We don't want to just live longer, we want to be able to actually enjoy life longer if that makes sense. You know? It's a stark difference when you're able to continue to live and actually be able to do the things that fill you up and give you joy, and to remember the people that you love.

Right? And this is something that Max- like it hit my heart really when I was reading the book like that's just devastating, you know? And I know that experience as well, and I'm passionate about the same thing as him, is helping to prevent as many situations like that from happening as possible, but also we have an opportunity to change some of that, you know?

He's the first person to come on and say, "Look, this situation is- on the board it's incurable, but we can see some improvements." Alright? We can see some improvements if we kind of stack some conditions, do some things right, we can see some improvements.

So I want you to have that ammunition as well, so make sure to check out 'Genius Foods,' and stick with me. Like I mentioned earlier before about getting out and speaking more to younger audiences.

And something that I used to do back in the day, like I shared this before, that I'd go to a middle school of 'juvenile delinquent girls,' like a middle school and there's like metal detectors walking into the school. And just like seeing the conditions that a lot of kids are in, and they don't get an example of somebody who's living life and doing something that's positive.

And so what I want to encourage you to do is to be that person for somebody else, alright? At least even today, like try and make somebody else's day better, but more importantly, give somebody an example of what's possible, or even set that as your modus operandi.

Because if you can't see it, you can't be it, alright? If you can't see it, you can't be it. Give our kids some examples, alright? Reach out, get involved in our community because I can't do this by myself, and neither can you.

But if we're all working together and being the model ourselves, and just sharing our experience- because you don't have to have it all figured out. That's another thing that would hold us back like, "I'm not there yet." I promise you, if you're even one step beyond somebody, your insight, your experience can help to lift them up, alright?

So this is something I'm doing more, and also of course like we're doing the same stuff that we're doing getting out and talking to the community as well. So make sure to stay tuned for the events that we have coming up at a city near you.

Alright? Stay connected on Instagram, it's probably the best place - I'm @ShawnModel - to stay super up to date. Of course I'll do my best to mention stuff on the show as well.

So guys, I appreciate you immensely. We've got some incredible shows coming up, I'm telling you. Get some- like tape your socks on, alright? Wrap a tourniquet around your socks, because we're going to blow them off, alright?

I need you to be ready, alright? Get those socks strapped on, alright? I appreciate you so much. So much good stuff in store, so make sure to stay tuned. Take care, have an amazing day, and I'll talk with you soon.

And for more after the show, make sure to head over to www.TheModelHealthShow.com. That's where you can find all of the show notes, you can find transcriptions, videos for each episode, and if you've got a comment you can leave me a comment there as well.

And please make sure to head over to iTunes and leave us a rating to let everybody know that the show is awesome, and I appreciate that so much.

And take care, I promise to keep giving you more powerful, empowering, great content to help you transform your life. Thanks for tuning in.