

EPISODE 319

Eating for Cognitive Power & The Truth About Brain Food - With Guest Dr. Lisa Mosconi

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'm obsessed, alright? I'm obsessed with the human brain. It's the most incredible- it's like *The Final Frontier*, really. You know, we watch *Star Trek* and all that kind of stuff to try to see what's going on in space.

We have this incredible universe within our own bodies, and it's capable of so much, and we're just now starting to really understand what's going on with our miraculous brains, and the things that they're capable of.

So I'm very, very excited, very obsessed, because everything in our reality is really stemming from - and pun intended - stemming from our brains.

You know, our experience of happiness, our experience of joy, our memories are all tied to the function of this incredible organ.

And my passion in my job is really driven by how can we make sure that we can optimize those experiences? And it starts with optimizing this incredible organ.

And with that said, I don't think there's a better person on the planet to have on the show to talk about how to actually feed our incredible brain, and also some insights about what is your brain actually made of?

So we're going to talk about all of that and so much more today, but first, I'm on the road, I'm in NYC, and even before the show somebody really special asked me, do I like NYC?

And the answer is yes, because it's kind of surprising because my life coming from the Midwest is a little bit slower, but I love the pace here.

And the thing is with the pace is just like immediate. You get to the stop light, you'd better walk- you'd better get going when that light changes, or you're going to get run over.

Alright? But also there's a deep passion with people here, and there's a love of culture, and there's a love of food. So many incredible healthy options here in NYC surprisingly, and so many incredible gyms, and yoga studios, and Pilates, and Zumba.

Just you can't really go a block without seeing something cool that's pro-health, and so I love the city, and here at the studio, and we've got our special guest in the house, so we're going to get into that.

But when I travel, you know I'm all about optimizing my sleep, alright? And so one of those things, and one of the biggest deficiencies today, we're seeing upwards of 80% to 90% of the population is deficient in magnesium, alright?

This is like the biggest mineral deficiency that's happening right now, and the reason is, it's kind of an anti-stress mineral. It's dealing with a lot of stress, and there's over 325 biochemical processes that magnesium is responsible for.

Even your experience of having energy. I was taught in school it's like ATP, this energy currency, but it needs to be bonded with magnesium as well.

So it's really MGATP to kind of be this active currency. And so energy, recovery, muscle function, and also sleep. Alright? And this has kind of like a relaxation type of response in the body.

But here's the issue; being such a big mineral deficiency, food first, eat more magnesium-rich foods. Given. Part two, supplementation, you've got to be careful, alright?

Over ten years in clinical practice, early on I would recommend folks- and this was one of the only things I'd recommend as far as supplements for them across the board was magnesium.

I'd have clients coming in and patients to take an oral supplement of magnesium, and here's the problem with that.

We have something called bio-tolerance, alright? If you take even a little bit too much, you get what we call clinically disaster pants, alright? AKA poopy pants, AKA diarrhea, alright?

So you have to be careful about the amount of magnesium you take with the oral supplement. My solution was topical magnesium, alright?

Our skin eats, and just like there's all these fancy hormone creams today, but the thing is there are so many different magnesium products that you can run into your skin topically, but they're somewhere on the line of like 70% to 90% absorbable.

The one that I use, and I've been using for over five years, is called Ease Magnesium. It's a super critical extract, 99.9% absorbable, alright?

And the company itself, they're doing everything the right way, and this is a really great viable way to get your magnesium levels up in a smart way without getting disaster pants. Alright?

So, food first, possibly oral supplementation, definitely Ease Magnesium. I highly, highly recommend it. It's one of the things that I get the most comments from folks talking about, and just so overjoyed that they started utilizing it for improving their sleep, improving their energy levels, recovering from different injuries and pain, the stories are crazy.

But that's because magnesium is responsible for so many different things. 325 biochemical processes. That means there's like 325 things your body can't do or do properly without it, alright?

So definitely check them out, it's www.EaseMagnesium.com/model, alright? You're going to get 15% off Ease Magnesium, and also they have a Deep Soak product that you can pour into your bathtub, alright?

I know you know about the Epsom salt bath, alright? It's classic. This is the upgraded version. Okay? Head over, check them out, www.EaseMagnesium.com/model. Now, let's get to the iTunes review of the week.

iTunes Review: Another five-star review titled, 'Love It,' by AlexTheMoneyMaker.

"This is a podcast to listen to if you're someone who wants to dramatically increase your health, longevity, human performance, and spirit.

Shawn delivers a slew of implementable information in the most easy, understandable, straightforward way, and this is just one of the plenty reasons why I favor *The Model Health Show*, and have become a better person because of it.

If you're someone wanting to upgrade your life, then you need to hit the 'Subscribe' button. Keep up the amazing work, Shawn."

Shawn Stevenson: I love that so much. 'A slew of implementable action items,' things to execute on. I'm very, very big on action items, and today you're definitely going to get a bunch of those, and just thank you so much for taking the time to share that and leave that review.

If you've yet to do so, please pop over to Apple Podcasts and leave a review for the show. It would mean a lot, alright? And on that note, let's get to our special guest and our topic of the day.

Now, I usually don't read the bio word for word, but I'm going to share some of this because she might just be like the most incredible person on the planet, alright?

Dr. Lisa Mosconi, PhD INHC, is the Associate Director of the Alzheimer's Prevention Clinic at Weill Cornell Medical College where she is also Associate Professor of Neuroscience and Neurology as well - amazing - and also an adjunct faculty member at the Department of Psychiatry at NYU School of Medicine.

She has a PhD in neuroscience and nuclear medicine, and is also - and this is what's so cool about her - she's also an integrative nutritionist and holistic healthcare practitioner, blending all of these things together in a really, really special way.

Now, that being said, having such a diverse background - and there are so many different things, I could read her bio for another five minutes, all the things she's accomplished - but she's taken this work and really looking at what actually works for feeding the human brain?

She's got a brand new book called, 'Brain Food,' that I have right here, and it is one of my top ten books of the year for sure. Easy, probably top five. Let's just be honest.

And I'd like to welcome to *The Model Health Show*, Dr. Lisa Mosconi. How are you doing?

Dr. Lisa Mosconi: Good. Thank you so much for having me.

Shawn Stevenson: Oh, it's my pleasure. I'm so happy to have you here.

Dr. Lisa Mosconi: Thank you.

Shawn Stevenson: So you've done a lot. You've accomplished a lot. Do you even realize how awesome you are?

Dr. Lisa Mosconi: No, usually I do not. I'm an academic, so we've just got all these titles, but we don't really appreciate them.

Shawn Stevenson: Yeah, well I'm hoping that I can extend some appreciation your way.

Dr. Lisa Mosconi: Thank you.

Shawn Stevenson: Because you've like really put in the work, and you've put together something that's very special, and it's so digestible. Because I know firsthand, me after I'm graduating, I'm writing and creating these things that's really written for other intellectuals instead of like, 'Let's make this accessible and easy to understand.'

Dr. Lisa Mosconi: Yes. That's really hard.

Shawn Stevenson: Because that's what the point is. You know?

Dr. Lisa Mosconi: It was very hard for me.

Shawn Stevenson: Yeah.

Dr. Lisa Mosconi: I'm a scientist. I'm another scientist by training, and they usually write for scientists, so they write a lot of scientific papers and they're very, very cut and dry.

Shawn Stevenson: Yeah.

Dr. Lisa Mosconi: You know, the P value is this much, and the chi-squared is that. But yes, writing for the public is a very, very different experience.

Shawn Stevenson: And even-

Dr. Lisa Mosconi: Very rewarding, very hard for me also because English is actually my third language.

Shawn Stevenson: Your third language?

Dr. Lisa Mosconi: Yes. Italian, French.

Shawn Stevenson: Wow, that's amazing.

Dr. Lisa Mosconi: So it was hard. It was probably- it was challenging.

Shawn Stevenson: But I'm sure it helped you grow quite a bit.

Dr. Lisa Mosconi: Oh, for sure. Very humbling.

Shawn Stevenson: Yeah.

Dr. Lisa Mosconi: Very humbling experience.

Shawn Stevenson: And that's all while- was your daughter born?

Dr. Lisa Mosconi: So that's interesting. I signed the contract to write the book three weeks after she was born.

Shawn Stevenson: Wow.

Dr. Lisa Mosconi: And so I wrote the book- I had a year to write it, so she was an infant of course for the entire time, and my husband used to live in Boston. He used to work at MIT. He was a professor at MIT.

Shawn Stevenson: Yeah.

Dr. Lisa Mosconi: So that was-

Shawn Stevenson: Holy moly. When people are like-

Dr. Lisa Mosconi: I really credit my nutrition to the fact that I was able to keep it together. Like I was working full-time until I was asleep, and writing the book whenever I could.

Shawn Stevenson: Yeah. And I just gave you a copy of 'Sleep Smarter' as well.

Dr. Lisa Mosconi: Yes, exactly. Sleep actually is the thing I'm not doing great.

Shawn Stevenson: The kryptonite.

Dr. Lisa Mosconi: It's my kryptonite, yes.

Shawn Stevenson: For Superwoman.

Dr. Lisa Mosconi: Can't sleep, yeah. I mean, I do sleep, but I really look forward to reading your book and getting some tips.

Shawn Stevenson: Oh, that makes me so happy. I've learned so much from you already because I got my hands on your book first, and of course we're going to dive into this, because some of these insights- and by the way, so I could catch those moments in the book where it's just like, "Oh, she's getting her science pants on here."

Dr. Lisa Mosconi: Yes, I know. I know, it shows.

Shawn Stevenson: But I'm like, "She's trying to like make this even more simple." But I - and also my audience too - we like to know stuff.

Dr. Lisa Mosconi: Right, yeah.

Shawn Stevenson: And so it's just like something that- it's not just the basics, right? Like this book is not just for folks who are looking for basic information.

Dr. Lisa Mosconi: For the faint of heart.

Shawn Stevenson: It's a little bit more upgraded.

Dr. Lisa Mosconi: Yes, it's what a scientist thinks about the brain, and I had to cut out a lot actually, but I fought to keep some information. This is really important. You need to understand how the brain works in order to really optimize what you do for your brain.

Shawn Stevenson: Exactly.

Dr. Lisa Mosconi: Not just in terms of food, but everything else that really impacts brain health.

Shawn Stevenson: Absolutely.

Dr. Lisa Mosconi: And if you don't know how the brain works, it's really hard to tell what is true, and what is not. And there are a lot of conflicting theories about brain health and brain nutrition, especially.

And I find a lot of people can't really tell which one to follow, who to listen to, because they perhaps don't have the basic knowledge themselves.

Shawn Stevenson: Yeah.

Dr. Lisa Mosconi: And once you do, then you're able to really criticize what you read, and be more inquisitive perhaps, or ask more questions instead of being like, "Okay, today I'm vegan, and tomorrow I'll be on the Keto diet." So that was my goal.

Shawn Stevenson: Oh, I love that. Again, that just really speaks to me because there's just a lot of data out there, and there's a lot-

Dr. Lisa Mosconi: There are a lot of opinions.

Shawn Stevenson: Absolutely, right.

Dr. Lisa Mosconi: More than data.

Shawn Stevenson: And a lot of anecdotal evidence.

Dr. Lisa Mosconi: Yes.

Shawn Stevenson: Which we can't negate that, but at the same time, if we're really going to reach and help the greatest amount of people, we need the science.

And so what I loved about you and what you do, is that you actually are looking at the organ that you talk about.

Dr. Lisa Mosconi: Yes.

Shawn Stevenson: Which is like, just huge for me right off the bat, instead of like being based on a conversation that, "Oh, well you actually just need some Zoloft, or you just need some zinc or whatever," just off of a conversation.

And some things of course, we know across the board they're requirements, but many of these things, we might not be deficient on a drug.

We might not even be deficient on a supplement, and so really starting to understand more holistically what's going on with our brain.

And so before we get to that, I want to ask you just even, how?

Dr. Lisa Mosconi: Why?

Shawn Stevenson: Okay, so being from Italy, right?

Dr. Lisa Mosconi: Yes, I was born and raised in Florence in Italy, and went to a French high school, so I spent a lot of time in France.

Shawn Stevenson: A French high school in-?

Dr. Lisa Mosconi: So the school was based in Florence, but we would do- all the classes- most of the classes were in French, and then we would spend a lot of the year in France.

So I was in Paris for a long time, Leon, Blois - a little city in the north, Marseilles.

Shawn Stevenson: Wow. So was your love or passion- like where did you start getting so interested in science?

Dr. Lisa Mosconi: Oh, in science? Well, my parents are both nuclear physicists. I should put it in my bio. Both of them.

Shawn Stevenson: Yeah. Yeah, that's going to make a very interesting baby.

Dr. Lisa Mosconi: Right, yeah. Yeah, so my parents are nuclear physicists, my cousin is a biologist, my uncle and my aunt are engineers.

So I think I was exposed to science from a very young age. Like I was the weirdest kid in school. I had no idea who Cinderella was, but I knew everything about gravity. And I was in kindergarten, so that was interesting.

Shawn Stevenson: Wow.

Dr. Lisa Mosconi: Yeah, but I think I never questioned it, I just assumed I would be a scientist myself. And so I went to- I started school, I went straight to neuroscience, which was new in Florence. We were the first year.

Shawn Stevenson: Oh, that's so cool, the timing.

Dr. Lisa Mosconi: Yeah, it just opened and we have to take an exam, and only some people can get in school.

Shawn Stevenson: Yeah.

Dr. Lisa Mosconi: And so I got in and it was great. And so what happened is that my grandmother started showing signs of Alzheimer's disease around that time, and then her two sisters also developed dementia within a few years of that, and their brother did not, which was quite an eye opener for me.

Shawn Stevenson: Interesting.

Dr. Lisa Mosconi: Yeah, for my mom and of course for myself. And so I started working in the field of Alzheimer's disease immediately in college.

And also I should say that my mom is a nuclear physicist, she was teaching students who then transferred to medicine - nuclear medicine - and they used to babysit me when I was little.

And then when I got- when I was old enough to actually understand what they were doing, I started training with them. So immediately, I was the youngest-

Shawn Stevenson: Babysitting?

Dr. Lisa Mosconi: Yeah. Yeah, they were babysitting me.

Shawn Stevenson: Most kids are like watching Netflix, and you're like- oh my goodness, that's amazing.

Dr. Lisa Mosconi: No, it was interesting. But so immediately I asked them, "Can I come volunteer? Can I train with you guys?" Because they were looking at the brain.

They were doing- nuclear medicine is really code for radiology with radioactive isotopes. So when you look at scans of the brains where some parts are blue, some parts are red and yellow, that is nuclear medicine. We look at functionality inside the brain, the biochemistry of the brain.

And I thought it was the coolest thing ever, so that's what I wanted to do. And they immediately put me to work on a project about Alzheimer's disease because I was so interested in that, and I never stopped.

So I've been working in the field of Alzheimer's forever.

Shawn Stevenson: It's driven by your family members.

Dr. Lisa Mosconi: Yes, and specifically I was interested in prevention of Alzheimer's, and what causes Alzheimer's, what triggers it, and what do I do to stop it?

Shawn Stevenson: Yeah.

Dr. Lisa Mosconi: And so then I moved to New York to look at the genetics of Alzheimer's, and within a couple of years I was just so disappointed.

Shawn Stevenson: Yeah.

Dr. Lisa Mosconi: I mean, in a good way because it turns out that genetics doesn't play such a big role as we previously thought it would. So there are some genetic mutations that cause Alzheimer's, but that's really less than 1% of the population.

Shawn Stevenson: Less than 1% of the population.

Dr. Lisa Mosconi: Less than 1% of the population.

Shawn Stevenson: Is a direct genetic mutation resulting.

Dr. Lisa Mosconi: Yes, less than 1%. That is not to say that genetics don't count.

Shawn Stevenson: Absolutely.

Dr. Lisa Mosconi: Of course everybody has a genetic makeup, we have genetic risk factors, but they are not as impactful as we previously thought they would be.

And so I started thinking, "Well what then makes the difference here?" And that's how I started looking into lifestyle, and specifically nutrition, because it was really my research that pointed me to diet as a major factor that impacts the health of the brain.

Because I was looking at everything. I was looking at exercise, intellectual activity, diet, nutritional quality, vascular risk factors, all sorts of vascular risk factors that are known to impact the brain; obesity, diabetes.

And when you put them all into your statistical model, and you have the brain as something you're trying to predict, diet is the one factor that kind of always stands out.

Shawn Stevenson: Wow.

Dr. Lisa Mosconi: Accounting for everything else.

Shawn Stevenson: Yeah.

Dr. Lisa Mosconi: So that really convinced me that the diet had a huge role, and then I founded- I started a lab when I was at NYU. It was called- not a great name, but it was the Nutrition and Brain Fitness Lab. So scientists are very to the point.

Shawn Stevenson: Yeah.

Dr. Lisa Mosconi: Nutrition and Brain Fitness Lab. And we were doing brain scans, which it was really new back then, because everybody would just measure your diet today, and then wait ten, fifteen years until you either developed Alzheimer's or did not. Right?

And then they would collect information on hundreds of people, and then go back to the data they had collected twenty years prior and go like, "Oh, the people who twenty years later developed Alzheimer's ate a lot of saturated fat, a lot of trans fats, a lot of cholesterol, and the other people did not."

But that's really bypassing the brain. For me, I want to know what's happening inside your brain as you eat certain foods, as you follow a certain diet, and can I change it?

So I decided to use brain scans to do that, which is still kind of not really common practice.

Shawn Stevenson: Yeah, it is definitely not. Definitely not, and you actually talk about the fact that the brain has really its own unique diet.

Dr. Lisa Mosconi: Yes.

Shawn Stevenson: And you call this neuro-nutrition, and it's different from that of the rest of the body.

Dr. Lisa Mosconi: Yes, it is.

Shawn Stevenson: Which is really interesting. So why? Why is that?

Dr. Lisa Mosconi: So I also thought it was really fascinating. As a scientist, we're not trained in nutrition. Zero. Medical doctors are usually not trained in diet and nutrition either.

So when I was starting, I studied a lot of biochemistry, and I was reading all these names like magnesium, potassium, sodium, phospholipids, choline, and I never questioned, "But where do they come from?"

Shawn Stevenson: Yeah.

Dr. Lisa Mosconi: Right? I just assumed it's something that's inside your brain.

Shawn Stevenson: Same thing for me. Same thing.

Dr. Lisa Mosconi: Right? And instead, they're from the foods you eat, and that was- for me it was really like, "Whoa, I never really thought about it."

And I took a lot of biochemistry, a lot of neurochemistry, and so I started doing a lot of research in that regard, and most of the studies were from the seventies and the eighties.

Like they were done so long ago that basically we have lost trace because they were published in print, right? There are no electronic copies of that, so I had to go back to the library, which is a fantastic experience. It's so quiet.

I mean it. Yeah, and really just request scanned copies of these super ancient papers, but it turns out- so the way the brain works is fascinating to me.

So the brain is an incredible organ, and it's actually the only- it's the most protected organ in the entire body. And that's in part why we don't associate that with food, because we're taught in neuroscience school or in medical school that the brain is isolated from the rest of the body.

It's literally shielded by a blood brain barrier.

Shawn Stevenson: A blood brain barrier.

Dr. Lisa Mosconi: Right, it just enables specific substances to go inside the brain and kind of precludes access to everything else.

But the truth is that this barrier has little gates that are specific for the nutrients that the brain needs, and the brain itself opens the gates and then closes them back once it got the food it needs.

So there are specific gates that tell us what kind of nutrients are good for the brain and needed by the brain, because these are the only nutrients that the brain has gates for.

Shawn Stevenson: Right.

Dr. Lisa Mosconi: And that can get inside the brain. And they're really a handful. Like there are about 100 nutrients that are important for health overall, but the brain only has access to- I'm going to say thirty.

And we need to constantly replenish these nutrients because the brain needs them. We have little sugar gates, so the brain- when the brain glucose levels go down too much, then the brain would just open the gates, and allow the glucose to flow right in.

And when it's done, the gates close. So it's not us. We're not necessarily influencing brain nutrition as much as the brain itself saying, "Oh, I'm hungry." "I'm not hungry anymore."

And that's very special because it doesn't happen in the rest of you, and I thought it was beautiful. It's such a strong protective mechanism that also guides us in terms of what kind of foods and nutrients we should be eating on a daily basis, and what kind of foods and nutrients are not that helpful instead. At least for the brain.

Shawn Stevenson: There are so many interesting things in your book, and the way that you stated certain things really just kind of set off a lightbulb for me.

And I want to ask you about what makes brain cells different from other cells in our bodies? Because-

Dr. Lisa Mosconi: They don't die.

Shawn Stevenson: Yes.

Dr. Lisa Mosconi: Yeah, they're irreplaceable. So in the rest of the body, all the cells can regenerate. So there's a specific turnover. Like for instance, red blood cells die and get replaced all the time. Hair. People lose hair all the time, but then they grow them back.

And that's why even short diets have an impact on the rest of the body, because your cells have a turnover that can easily be modified.

So when a new cell is born, you are affecting the development of the new cell. So you can kind of control and guide your body to do certain things.

Not inside the brain. So our brain cells are born with us, stay with us for a lifetime, they die with us. And the way it works is just an explosion of neurons as soon as we're born, and then there's actually a lot more brain cells inside your head than stars in the Milky Way.

Shawn Stevenson: See this goes back to that *Star Trek* that I was talking about at the beginning.

Dr. Lisa Mosconi: Everything is about *Star Trek*. But then as the baby develops, some of the connections, some of the neurons are lost. And then by the time we reach other lessons, we pretty much have all the brain cells we're ever going to have.

And there's been a lot of work showing that neurogenesis continues also in the adult brain. So neurons keep growing, and keep being formed, but in reality it's just really a minority of brain cells-

Shawn Stevenson: Right, in certain places in the brain.

Dr. Lisa Mosconi: Yeah, they're like in the hippocampus, in the memory center of the brain, in other parts. But by and large, that doesn't really happen. If it does happen, it's then dried.

So it's like the appendix is other neurons, not the neuron itself. So we really have to take care of the neurons because they can't just be replaced.

Shawn Stevenson: I think that's one of the biggest insights I want people to get today, is how important it is to take care of those cells, because you don't get new ones.

Dr. Lisa Mosconi: You don't. Also, you can't change them as easily as the rest of you. So if you read, like in a book, that in twenty-one days you're going to change your brain forever, it's just not true. It's impossible. It is biologically impossible. It takes time. It takes time and consistency.

Shawn Stevenson: And also there's something interesting about the brain, and I would see this of course in people coming into my office, experiencing migraines and headaches.

They're thinking- and I remember growing up, like you think your brain hurts, but that's not actually reality.

Dr. Lisa Mosconi: Yeah, no it's your muscles in the neck, and even here in the head.

Shawn Stevenson: Because the brain cells don't have pain receptors.

Dr. Lisa Mosconi: They do not have pain receptors, so the brain cannot feel pain.

Shawn Stevenson: That's nuts.

Dr. Lisa Mosconi: Yeah.

Shawn Stevenson: And so even with that said, the brain not having pain receptors, it's not like your hand that can tell you that it needs some treatment, right? So can you talk a little bit about that?

Dr. Lisa Mosconi: Yeah, so well the brain is not able to feel pain because the brain is in charge of feeling pain everywhere else in the body and making sure that we address that pain.

If we had pain receptors in the brain, we would be really in trouble because we just couldn't think straight most of the time.

Shawn Stevenson: Right.

Dr. Lisa Mosconi: The problem with that is that it's very hard to understand the health status of your brain. We have no access to what's going on inside the brain, so if the brain is in trouble, we don't know, and we will not know until there are symptoms that become evident in terms of behavior, or like movement disorder, or insomnia.

Basically we need a deficit to know that the brain is in trouble, and that also speaks to prevention really. We should not wait that long because that means then whatever is going on in the brain that's causing the symptom has reached an impasse, a threshold that just makes the brain itself unable to deal with that.

So by the time you get to that point, you have a disease, or you have a condition that is severe and its attention.

Shawn Stevenson: And now we're able to look- again, look at the organ that was so hidden and so protective, and you can see where the potential areas might be, or potential areas of trouble, and you can prescribe a certain plan of action based on that.

Dr. Lisa Mosconi: Yeah, for sure. We do- so the Alzheimer's Prevention Clinic that I'm the Associate Director of, we do brain imaging on all the patients in my studies, and those I used to do at NYU for twelve years before I moved to Cornell.

And in younger people it's rare to find like an actual severe problem, but it's very common to find aneurysms that are growing brain tumors. They're so common.

Shawn Stevenson: Wow.

Dr. Lisa Mosconi: They're so much more common than anybody would imagine. And they're not necessarily malignant, you know? They could be benign but it's something that requires attention, and if you have some symptoms of memory loss and confusion, it's very likely because something is pushing against your brain and it's creating issues.

Or hydrocephalus, like when you have too much fluid inside your brain. Or brain inflammation, that's a problem. Or brain atrophy is something we need to address.

And a lot of things that happen in the brain are really related to food and to food choices because the brain uses neurotransmitters to communicate- for brain cells to communicate with each other. They use neurotransmitters like serotonin - which I'm sure you talk about in your book - dopamine, acetylcholine - which is the neurotransmitter that makes memories inside your brain.

And they're all built on food, on very specific nutrients that the brain needs in order to make these neurotransmitters.

Shawn Stevenson: Yeah, and I want to get all into that. I want to ask you first about this concept that- the first time I'd seen this was this concept of brain reserve.

Dr. Lisa Mosconi: Yes.

Shawn Stevenson: Can you talk about that please?

Dr. Lisa Mosconi: Sure, so because brain cells are by and large irreplaceable, the health and the quality of your brain cells give you some kind of reserve, which is basically like the higher the quality of your cells, the more resilient your cells are, the healthier your cells are, the more interconnected your brain is, the higher its ability to withstand insults down the line.

Right? So it makes sense that the healthier you are, the better you'll be able to face a number of issues down the line. You get a cold, you just get back in shape in a day.

But if your baseline is not that good, then it's much easier to get sick or to be more vulnerable to a number of things that can happen.

Shawn Stevenson: So it's kind of like a reservoir.

Dr. Lisa Mosconi: Yes.

Shawn Stevenson: Like just a utility if it's built up in a strong way.

Dr. Lisa Mosconi: Yes.

Shawn Stevenson: Okay, so we really want to-

Dr. Lisa Mosconi: It gives you resilience against disease.

Shawn Stevenson: Yes, that resiliency.

Dr. Lisa Mosconi: And against, aging, and it's something that we need to cultivate really over a lifetime. And it's not just genetic.

So when this concept developed, it was assumed that your genes played a huge role in determining your brain reserve. Right? And then some people are just more genetically blessed than others.

And now instead, it turns out that it's really- sure, there is a genetic component, there's some kind of blueprint that comes from your parents and from your DNA. But the way you live your life has a huge effect on the health of your brain.

Shawn Stevenson: Yeah, so shout-out to people that are blessed with the good brain, but also we all really are, we have so much potential.

Dr. Lisa Mosconi: Yes.

Shawn Stevenson: Man, this is so fascinating. So let's talk about food.

Dr. Lisa Mosconi: Let's talk about it.

Shawn Stevenson: Let's talk about how food relates to the form and function of the brain. First, let's start with the form of the brain itself. What are our brains made out of?

Dr. Lisa Mosconi: Oh, well our brains are made of food, are made of nutrients, right? So the brain is made of chemical-

Shawn Stevenson: Wait, hold up. So I just want people to get this. Your brain, responsible for everything in your reality, is made of the food you eat. Please continue.

Dr. Lisa Mosconi: Well, so the brain is made of nutrients. The brain is made of chemical molecules that we call nutrients. The difference is that the brain makes a lot of the nutrients on its own. Right?

Shawn Stevenson: Right, which is different for people, because we might think like these Cheetos or whatever is going to become my brain.

Dr. Lisa Mosconi: No.

Shawn Stevenson: It doesn't work like that.

Dr. Lisa Mosconi: No, it doesn't work like that, although they will have an impact.

Shawn Stevenson: Yeah, definitely have an impact, but more likely you can make other tissues out of these different foods.

Dr. Lisa Mosconi: Much more likely.

Shawn Stevenson: Whereas your brain makes a lot of these nutrients, or these compounds itself, which is very, very fascinating.

Dr. Lisa Mosconi: And I think it's important to clarify that- I've read it very often that the brain is made of fat, and so we should eat a lot of fat to replenish brain fat, and cholesterol is a very prevalent brain fat, and saturated fat is prevalent in the brain.

But in truth, the brain makes them on its own. So cholesterol is made only - only - by the brain as soon as we're born, and brain cholesterol is completely sealed away from the rest of the body for the entire time that we're alive.

There are no gates in the blood brain barrier for cholesterol, so no cholesterol from food will ever be part of your brain. So that's the first thing.

Saturated fat, there are gates for saturated fat, they're smaller ones, but what happens is that the brain opens the gates when we're little.

Shawn Stevenson: Right.

Dr. Lisa Mosconi: So children all the way throughout adolescence, but then those gates pretty much close.

Shawn Stevenson: And that makes sense because of the-

Dr. Lisa Mosconi: Because the neurons are done, right? The brain has already all the neurons that it needs, and so cholesterol and saturated fat in the brain only have structure. Wrong.

The brain cannot burn fat for energy. It is the only organ in the body that just can't burn fat for energy. So whatever fat is in the brain is just to give it structure, and to just keep the neurons in a certain position, and to wrap them with cholesterol and other fats so it acts like a conductant [sic] so that the information - the electrical stimulus - can fly faster from one end of the neuron to the next neuron.

Shawn Stevenson: Because the physical brain itself is mostly fat and water.

Dr. Lisa Mosconi: It's mostly water. 80%.

Shawn Stevenson: Water and then fat and then protein?

Dr. Lisa Mosconi: Fat and protein is kind of a tie honestly.

Shawn Stevenson: Pretty close?

Dr. Lisa Mosconi: Yeah, once you take water out of the equation.

Shawn Stevenson: And then probably vitamins and minerals?

Dr. Lisa Mosconi: Yes and very, very little carbs because they're just being used instantaneously. They just don't have time to sit around.

Shawn Stevenson: But a lot of those fats- and again, it makes sense as well, just with nutrition for an infant, for example. You're going to have that constituent.

Dr. Lisa Mosconi: Breast milk.

Shawn Stevenson: Breast milk is going to be more saturated fat.

Dr. Lisa Mosconi: Yeah, you need it to grow.

Shawn Stevenson: Yeah, that makes so much sense.

Dr. Lisa Mosconi: But then you don't need it anymore when your brain is done. Once you have a brain.

Shawn Stevenson: Yeah, I don't know who's making like breast milk smoothies out there. In truth, I mean, I guess if you're getting any kind of milk- never mind.

Dr. Lisa Mosconi: In principle it makes sense, but not after a certain age, I think.

Shawn Stevenson: Right, right.

Dr. Lisa Mosconi: But so the only kind of fat that can get inside your brain, and the brain needs and wants, is called long chain polyunsaturated fat.

Shawn Stevenson: PUFAs.

Dr. Lisa Mosconi: Which in English- yes. So that would be Omega-3 and Omega-6. Polyunsaturated fatty acid, or PUFA. So that's salmon and fish.

Shawn Stevenson: I think that's terrible, like that acronym is- it just sounds bad, right?

Dr. Lisa Mosconi: It's horrible. There's PUFA, MUFA, SFA.

Shawn Stevenson: MUFA?

Dr. Lisa Mosconi: MUFA, monounsaturated.

Shawn Stevenson: I don't know if somebody called me a MUFA, I don't know, like those are fighting words. Oh my goodness. But those Omega-3s and Omega-6s specifically are- those are essential.

Dr. Lisa Mosconi: Those are essential fats, yeah. Those are the only essential fatty acids that the brain cannot make.

Shawn Stevenson: You've got to get those in via our diet.

Dr. Lisa Mosconi: And we need to eat them daily, especially the Omega-3s because the typical Western diet is pro-inflammatory. It's very rich in foods that contain a lot of Omega-6, and so usually the ratio is like ten to one, or twenty to one.

Shawn Stevenson: Yeah.

Dr. Lisa Mosconi: Whereas a good ratio for a healthy brain is more like two to one. So two Omega-6 for every one molecule of Omega-3. That's a good ratio.

Let's say four to one is acceptable, but ten to one or twenty to one is too much pro-inflammatory fat.

Shawn Stevenson: Yeah, and I guess like a systemic inflammation- like that's going to affect our brain probably as well.

Dr. Lisa Mosconi: Oh, for sure. Yes, so the brain is the most metabolically active organ in the body. It takes over 20% of the entire energy production inside the body.

But the brain is also really delicate, it's very, very sensitive to oxidative stress, which is the formation of free radicals.

Shawn Stevenson: Yeah.

Dr. Lisa Mosconi: And so it's very easily inflamed and oxidized which is like the rusting effect. It makes your cells age faster. So a pro-inflammatory diet just literally makes your brain age faster. You don't want that.

Shawn Stevenson: We don't want that.

Dr. Lisa Mosconi: No.

Shawn Stevenson: Oh my goodness. So physical structure - we've got water, fat, protein.

Dr. Lisa Mosconi: Yes.

Shawn Stevenson: Minerals and vitamins, specifically- and we'll get into some foods and just dive a little bit deeper on those Omega-6 in a moment.

Dr. Lisa Mosconi: Yeah, this is a lot of chemistry.

Shawn Stevenson: So I want to ask you about- again, just to reiterate a little bit about this blood brain barrier, or the BBB.

Dr. Lisa Mosconi: BBB, yes.

Shawn Stevenson: We'll make acronyms. Not Big Baller Brand, so no disrespect to- is it LaVar Ball? I don't know. The Ball family. Yeah, just don't worry about it, you just keep doing science.

But this blood brain barrier is very specific, and you said there's about thirty things- just around thirty things, thirty nutrients that are going to be able to actually access and get-

Dr. Lisa Mosconi: In the brain.

Shawn Stevenson: In the brain itself, because your brain is very selective. Even though it's very metabolically active, I think it's somewhere using like 20% or 25% of your caloric intake.

Dr. Lisa Mosconi: Yeah.

Shawn Stevenson: Crazy.

Dr. Lisa Mosconi: Yes.

Shawn Stevenson: But it's very selective, it's very choosy.

Dr. Lisa Mosconi: But thank God it does.

Shawn Stevenson: Yes, exactly. It's a choosy lover. So I want to just circle back really quickly and ask you about the cholesterol.

So the cholesterol- obviously dietarily [sic] we're seeing new insights about it being important, but first of all, your body is making a nice amount of it. You know, your liver.

Dr. Lisa Mosconi: Yes.

Shawn Stevenson: To do these processes, because it's kind of a pre-requisite to making sex hormones, for example.

Dr. Lisa Mosconi: Yeah, for sure.

Shawn Stevenson: But that dietary form of cholesterol is not the same that you're going to see in your brain, because again, your brain is able to make its own. Is that right?

Dr. Lisa Mosconi: Yes, so the brain makes neuro-steroids.

Shawn Stevenson: Okay.

Dr. Lisa Mosconi: That are different from the rest of the body. Yeah, and cholesterol is a special blend inside the brain, which is different from the rest of you.

I mean, it's the same substance, but it has different uses and different functions, and just can't get in touch with the rest of the cholesterol.

So you know, there's blogs or books that say you should eat a lot of fat to get smarter or happier. We're not, it's just not true. It's just plainly not true.

Shawn Stevenson: Yeah, it doesn't work like that.

Dr. Lisa Mosconi: No, but they can increase your risk of heart disease in fat.

Shawn Stevenson: Especially a lot of the wrong stuff.

Dr. Lisa Mosconi: So that's something to consider. So we have shown that even though these fats or cholesterol, saturated fat, trans unsaturated fat; they can't get inside the brain.

They do have some indirect effects because- not for everybody, but in some people, they really can produce inflammation, and the inflammation that you have in the rest of your body is able to get in the brain as well, because cytokines can cross the blood brain barrier.

So if you have inflammation in the rest of you, it can also affect your brain indirectly.

Shawn Stevenson: It's pro-inflammatory cytokines.

Dr. Lisa Mosconi: And of course if your heart is suffering, then your brain suffers as well.

Shawn Stevenson: Right, if it's bad for your heart, it's bad for your brain.

Dr. Lisa Mosconi: Yeah, there's a saying in cardiology that you're only as old as your arteries are, which is so true. It's really true because if your arteries are not nice and clean, then blood can't get to the brain, oxygen can't get to your brain, cannot get inside your brain, and then your brain starts aging faster because it really needs it, like constant.

Like blood flow to the head is a major predictor of brain health and brain function.

Shawn Stevenson: So we've got water, then we've got fat- slightly more fat than protein. It's close. So with protein, all protein or-

Dr. Lisa Mosconi: Essential.

Shawn Stevenson: Essential.

Dr. Lisa Mosconi: Essential amino acids.

Shawn Stevenson: Yes. So those are the ones we're looking for in our diet.

Dr. Lisa Mosconi: So there are a number- yes.

Shawn Stevenson: So with that said, these essential aminos- so those are some of the ones that the brain has those gates for.

Dr. Lisa Mosconi: Yes.

Shawn Stevenson: Okay. Alright, got it. So there are certain vitamins, minerals, proteins, and fats. So I want to now talk about function.

So we talked about form, kind of what the brain is made of. So let's talk about which nutrients do we know are critical for the function of a healthy brain?

And I want to go first through some lesser known ones, and then get more to the known ones.

Dr. Lisa Mosconi: Okay.

Shawn Stevenson: Everybody at this point hopefully has heard about the importance of Omega-3s for their brain, but now to know specifically from you, a neuroscientist, that this is actually getting there.

I want to talk about that for sure, but let's start with- let's talk about choline.

Dr. Lisa Mosconi: Yes, let's talk about it.

Shawn Stevenson: What is that?

Dr. Lisa Mosconi: It's a B vitamin. So choline is a B vitamin that is used by the brain to produce acetylcholine, and acetylcholine is a major neurotransmitter that the brain uses to produce memories.

So we need B vitamins, especially choline. Do you say choline or cholin?

Shawn Stevenson: Choline.

Dr. Lisa Mosconi: Choline.

Shawn Stevenson: But I like how you say it, too.

Dr. Lisa Mosconi: In Italian I say, 'Cholina.'

Shawn Stevenson: Oh my goodness, that's the cutest thing I've ever heard in my life. So choline for me, I would go for eggs.

Dr. Lisa Mosconi: Yes.

Shawn Stevenson: I would go for bee pollen is a good source.

Dr. Lisa Mosconi: Yes, bee pollen.

Shawn Stevenson: See? And I didn't see this in your book, I don't know. I'm not through all the book yet, which I love this book. I'm going to- there are certain books that I just feel that it's like mandatory.

Like if you really want to be really masterful about your health, I think it's so important for us to understand our brains.

Dr. Lisa Mosconi: I agree.

Shawn Stevenson: And I cannot believe there's not a brain food book specifically, and then created by somebody who's been in the lab, and like looking at this stuff, and it's just like you're basically like an X-Men.

You're like a mutant of health, like to have both of those sides.

Dr. Lisa Mosconi: It is bizarre.

Shawn Stevenson: And so it's like a big confirmation for certain things, and other things it's just like, 'Well, that makes sense. Let's just like toss that whole concept out.' And so I just love your book.

Dr. Lisa Mosconi: Thank you.

Shawn Stevenson: So choline is one of them.

Dr. Lisa Mosconi: Yes, I have more sources. Oh, can we talk about caviar, the fish eggs?

Shawn Stevenson: Let's go, let's do it.

Dr. Lisa Mosconi: Let's do it.

Shawn Stevenson: What's the other? There's caviar and then there's some other little eggs as well.

Dr. Lisa Mosconi: Salmon roe.

Shawn Stevenson: Roe, yes the roe.

Dr. Lisa Mosconi: Roe, yeah.

Shawn Stevenson: Roe, roe your boat.

Dr. Lisa Mosconi: You know, I didn't know until the book came out that in the States, caviar is really fancy food.

Shawn Stevenson: Yeah.

Dr. Lisa Mosconi: In Italy, there is no distinction between the fancy black caviar and just fish eggs, which is they use the word caviar for everything.

Shawn Stevenson: Yeah.

Dr. Lisa Mosconi: And so when the book came out, they even have it on the cover. This is caviar, right? And salmon roe is my number one brain food, and everybody was like, "But it's too expensive."

I was like, "But fish eggs are not really that expensive." And so I learned that you have to clarify salmon roe are fish eggs.

Shawn Stevenson: Yeah, when I heard caviar, I immediately thought of like Scrooge McDuck, like super wealthy.

Dr. Lisa Mosconi: No, it doesn't have to be.

Shawn Stevenson: You know, Grey Poupon, you know?

Dr. Lisa Mosconi: It doesn't have to be. No, no fish eggs are actually not that expensive. But so they're the best- the nutritional composition of caviar or fish eggs in general is pretty much the perfect complement to the nutritional composition of the brain.

It's really a one and one because they're very rich in choline, phospholipids, Omega-3 fatty acids, a good amount of protein. But they also contain antioxidant vitamins.

It contains vitamin A, vitamin C in some amounts, vitamin- a little bit of vitamin E, and mostly selenium. And selenium is a very rare mineral.

Shawn Stevenson: And it's super, super important, responsible for a lot of stuff.

Dr. Lisa Mosconi: It's very important because it's a strong antioxidant, and it's really hard to find in foods. Brazil nuts are a good source.

Shawn Stevenson: Brazil nuts.

Dr. Lisa Mosconi: But caviar or fish eggs are an excellent source.

Shawn Stevenson: Look at that, yeah.

Dr. Lisa Mosconi: I always mention it because of course nobody eats caviar every day.

Shawn Stevenson: Yeah.

Dr. Lisa Mosconi: But you know, once in a while if it happens.

Shawn Stevenson: Yeah, add that to your-

Dr. Lisa Mosconi: Just so you know, it's also really good for your brain.

Shawn Stevenson: Yeah, add that to your superhero utility belt of things to have access to, you know? But it's- again it's just having the awareness.

Dr. Lisa Mosconi: Yes, it's just the curiosity.

Shawn Stevenson: And also the stigmas attached because-

Dr. Lisa Mosconi: It's not just fancy food, there's actually a reason to eat it. There's a good reason to eat it.

Shawn Stevenson: For me hearing that, like immediately in the book I'm like, "Oh, that's fancy." Like it popped up in my mind, but it's a cultural difference, you know?

Dr. Lisa Mosconi: It is. It is.

Shawn Stevenson: Okay, so we've got choline is one. Let's talk about tryptophan.

Dr. Lisa Mosconi: Let's talk about tryptophan. So tryptophan is an essential amino acid, so it comes from protein, that the brain uses to make serotonin.

Serotonin is a neurotransmitter that is involved in a number of functions like mood, sleep, but also in memory. We don't usually associate serotonin with memory, but it actually has a really strong impact.

And the thing about tryptophan is that most people will just say, "Well, it's everywhere, and it's in many, many different foods." But the point is that it comes usually with a lot of other amino acids that compete with each other to get passage inside the brain.

So the gates are the same, right? And so tryptophan is usually the one that is left behind, so I think it's important to focus on foods that contain more tryptophan than the other ones.

Shawn Stevenson: Why is tryptophan left behind? Is it slow?

Dr. Lisa Mosconi: I don't know. I don't know. I think it's just not as abundant. So if you have a lot of like tyrosine and a little bit of tryptophan, you're much more likely to get a lot of the amino acid that is more abundant.

Shawn Stevenson: Yeah.

Dr. Lisa Mosconi: And that's why you need foods that are particularly rich in tryptophan.

Shawn Stevenson: That's super important. So this essential-

Dr. Lisa Mosconi: Especially before bedtime.

Shawn Stevenson: Yes.

Dr. Lisa Mosconi: Right?

Shawn Stevenson: And this essential amino- so it's used to build serotonin, which is a pre-cursor for melatonin.

Dr. Lisa Mosconi: Also.

Shawn Stevenson: But also there's so much news today about serotonin, and like kind of this happy neurotransmitter. And then even anti-depressants, a lot of them- you know, the SSRIs.

So the most important thing is like are we even making it in the first place, right?

Dr. Lisa Mosconi: Are we making enough? Yes.

Shawn Stevenson: And so this is one of the keys. So tryptophan, but when I hear tryptophan because just past and going through life, but I know better today, but I would associate like Thanksgiving turkey.

And you wrote about it in the book too, because you were like, "Oh, we eat the turkey. Tryptophan, you get sleepy. No, it's because-

Dr. Lisa Mosconi: It's because you eat too much.

Shawn Stevenson: Yes, you just like ate like there's no tomorrow, because I've done that. Like this is the last day of my life, I'm going to eat everything.

That's how we get on the holiday, like I'm just going to- but and it's an experience, you know? We feast, but it's not the tryptophan, by the way.

Dr. Lisa Mosconi: Yeah, milk is a better source. Whole milk. And I'm sure everybody does it, and when you're little you give warm milk with honey to kids to help them sleep. And that's because there's tryptophan in the whole milk.

Shawn Stevenson: Yeah.

Dr. Lisa Mosconi: It's a good source. And if you combine carbohydrates with tryptophan, it actually helps push the tryptophan inside your brain.

Shawn Stevenson: And you have lactase.

Dr. Lisa Mosconi: So that's why you want to.

Shawn Stevenson: Oh, with the sugar too from the honey.

Dr. Lisa Mosconi: With the sugar.

Shawn Stevenson: So the honey.

Dr. Lisa Mosconi: Yeah, the sugar from the honey.

Shawn Stevenson: So now are we talking about milk from a-?

Dr. Lisa Mosconi: Cow. A goat is actually better.

Shawn Stevenson: Okay, and also like is it genetically-?

Dr. Lisa Mosconi: Modified? No.

Shawn Stevenson: Yeah, no we're talking about the cows like eating- I don't know. Candy, right?

Dr. Lisa Mosconi: Grains. Usually it's grains.

Shawn Stevenson: Because true story, there was this big spill that happened. It was like all these red Skittles that coated the freeway. You didn't see this?

Dr. Lisa Mosconi: No.

Shawn Stevenson: Okay, I mean this was a while back. But this was going for feed for livestock.

Dr. Lisa Mosconi: Really?

Shawn Stevenson: Yes, nuts. I think this was in Florida. I've got to look this up. We've got to put it in the show notes so it's not like, "Wait a minute." But some people are going to know what I'm talking about.

And it's crazy, like the stuff that- and I've been pressing this into culture now, I see it everywhere. I'm not saying that I originated this idea, but you know, you are what you eat ate. It's not just you are what you eat.

Dr. Lisa Mosconi: Yes. No, it's true.

Shawn Stevenson: And so like making sure that we're getting these different animal foods from healthier animals.

Dr. Lisa Mosconi: Absolutely.

Shawn Stevenson: And of course you do make that distinction in the book as well.

Dr. Lisa Mosconi: Yes. I believe in organic, especially for women, if we can mention that.

Shawn Stevenson: Yeah, absolutely.

Dr. Lisa Mosconi: So for women, changes in hormonal levels are a natural problem that so many people just don't ever get to talk about. You know, women go through a series of endocrine transition stages as we mature through puberty.

But then the most shocking one perhaps is menopause. And menopause is the loss of estrogen and progesterone and other hormones that impacts everything inside your body, but also your brain, which we have shown with brain scans how for many women, as they go through menopause, that's when Alzheimer's really begins in their brains.

Shawn Stevenson: That's interesting.

Dr. Lisa Mosconi: And something to know about women's hormones is that there are many substances that we put into our food, that we put in the environment, that we put in our skin that are xenoestrogens.

They're foreign estrogens, and they are known to really mess up your own estrogen inside your body. So they act like estrogens, but they make everything worse.

Like if you have a predisposition to breast cancer, they're likely to push you to actually get breast cancer. And this is the society for endocrinologists, and they actually put out a warning because we are drowning in plastic.

And if you have food that is contained in plastic, and if you heat up the plastic, then all the substances that are known to mess up your estrogens will just leak into your foods, and then you end up eating them.

Shawn Stevenson: That's nuts.

Dr. Lisa Mosconi: And that really creates issues like man boobs, you know? Or the fact that girls become women at such a young age nowadays. It's not just normal.

Shawn Stevenson: Yeah, this is first grade, right? It's absolutely nuts. And like you just said, so these xenoestrogens fit into receptor sites.

Dr. Lisa Mosconi: Yes.

Shawn Stevenson: And like basically turn on these estrogen driven programs.

Dr. Lisa Mosconi: Yes.

Shawn Stevenson: It just all makes sense.

Dr. Lisa Mosconi: Yeah, you said it really well.

Shawn Stevenson: And so- well, you know. And so what's so interesting about it is, like you just mentioned, these xenoestrogens maybe from bisphenol A, or something like that- from plastics, which is a fossil fuel. Right?

And so like this is- let's not even go down that. We're talking about organic, and pesticides, herbicides, rodenticides, many of them are estrogenic.

Dr. Lisa Mosconi: Well but that's why organic is so important. They're all estrogens. Yeah, they're all estrogenic.

Shawn Stevenson: Or neurogenic. Some of them are like-

Dr. Lisa Mosconi: Well, estrogen is a brain hormone, you know?

Shawn Stevenson: Yeah.

Dr. Lisa Mosconi: We tend to associate hot flashes, and night sweats, and depression with your ovaries, but these symptoms don't originate in your ovaries. They start inside your brain because estrogen has a strong, strong effect inside the brain.

Shawn Stevenson: Wow.

Dr. Lisa Mosconi: And food has an effect as well, because food also impacts hormonal health in a big way.

Shawn Stevenson: Yeah, that's what this is all about.

Dr. Lisa Mosconi: But in particular, animal- so fat from animal food, that also impacts estrogen production, and not in a good way. It's been shown. It's not my own opinion, it's been shown to impact estrogen in women.

Shawn Stevenson: So you can't just go ham on ham, you know?

Dr. Lisa Mosconi: No. Especially for women, you know? It's not just heart disease because usually people are like, "Well, my heart is fine." I'm like, "Yeah, your heart is fine. But how about the rest of you?" You've got other functions.

Shawn Stevenson: Just be mindful. That's what I want people to do, is like don't get caught up in this-

Dr. Lisa Mosconi: Fad.

Shawn Stevenson: Yeah, I was going to say fancy flashy diet that's just like all animal products, you know? You need to eat 80%- you've got to do what's right for you, first of all, and not just buy into this.

And also, be aware of some of the potential dangers. And not to say- the amount that you're taking in, maybe it's a smaller amount, and that's fine, but you've got to look at the data, you've got to play the long game. Right?

Dr. Lisa Mosconi: Yes.

Shawn Stevenson: Just because bacon is super hot right now doesn't mean we've got to get bacon for breakfast, lunch, and dinner. You know?

And shout-out to bacon, you know? Chocolate covered- like, they're doing all kinds of crazy stuff with bacon. Anyways, so let's go to phenylalanine.

Dr. Lisa Mosconi: Phenylalanine, yeah.

Shawn Stevenson: Yeah, let's talk about that.

Dr. Lisa Mosconi: Okay, let's talk about it. So dopamine is another neurotransmitter that has a lot of different function in the brain. It's really important for movement and coordination, but also for like reward driven behavior and motivation.

And dopamine is made of an amino acid called tyrosine, and tyrosine in turn is made from phenylalanine. So you need to make sure you have enough in the diet.

But that's easy enough to do. It's not a difficult source to find. It's very abundant in all sorts of animal foods and fish. I would say fish, if you need to get a good lean protein, fish is a great source. Also fish is a great source of Omega-3 fatty acids.

Shawn Stevenson: Right, so they get that power packed.

Dr. Lisa Mosconi: So you can get- yeah. And then everybody goes like, "How about mercury?"

Shawn Stevenson: Yeah, how about it?

Dr. Lisa Mosconi: How about it? And so there are- it depends on how big the fish is, right? So the bigger it is, the higher the chances of mercury contamination.

So it's really important to go for fatty fish- for the brain, I'm talking about the brain. So fatty fish, especially cold water fatty fish which is like salmon, herring, trout. But also the smaller ones like mackerel, blue fish, sardines, anchovies.

And the smaller ones like anchovies and sardines, they're very unlikely to have any mercury. Yes.

Shawn Stevenson: Interesting. Your body can actually tolerate some, by the way.

Dr. Lisa Mosconi: Yes. Of course.

Shawn Stevenson: You know? It's not like mercury touches you, and you disappear.

Dr. Lisa Mosconi: No, of course. Well so how much fish do you eat?

Shawn Stevenson: Yeah.

Dr. Lisa Mosconi: I mean, we're talking trace. Right? Trace amounts of mercury, not the whole vat. There's always something to be said about common sense, I think. Right?

You can't eat fish every single day just because it doesn't make sense to do that. And also you can't eat a pound. Right? A good portion, depending on how tall and how muscular you are, but usually three ounces.

Shawn Stevenson: I didn't know you noticed my muscles. So I'm just kidding. So phenylalanine is a pre-cursor, tyrosine, and then we get-

Dr. Lisa Mosconi: Dopamine.

Shawn Stevenson: Dopamine, which is- we're talking about our drive.

Dr. Lisa Mosconi: Yes.

Shawn Stevenson: We're talking about happiness.

Dr. Lisa Mosconi: Much patience.

Shawn Stevenson: We're talking about reward. You need this one.

Dr. Lisa Mosconi: Playing games. When you're playing video games, it's dopamine that makes you feel like, "Yeah, give me more."

Shawn Stevenson: And you miss out on that without this- wow. So by the way, another source- I'm going to throw this in here for everybody, it's a perfect place. Phenylalanine, spirulina.

Dr. Lisa Mosconi: Oh yeah, there you go.

Shawn Stevenson: Spirulina. You talked about spirulina in your book. So this is a brand new study, I literally just came across this 2018 study, brand new, just came out.

This was published in 'Nutritional Neuroscience,' investigated whether it was possible to treat severe neonatal infection by administering a spirulina enriched diet to the nursing mother. So not even directly to the baby; to the mom.

And the researchers stated that severe infection and the associated brain inflammation can cause long-term changes to the developing brain due to oxidative stress even after the original infection has been treated and it's gone.

And what they found was - after they compiled the data - a spirulina enriched diet given to lactating mothers reduced the level of brain inflammation, alright?

So spirulina reduced the levels of brain inflammation and provided an antioxidant defense for the developing neonatal brain, which this is the question that we would ask our incredible guest.

Like how are they actually measuring this stuff? And so she's actually doing the work, and in the lab, and looking at things like this.

And so- by the way guys, spirulina, it's not the best. Let's just be honest. It's not like, "Oh my goodness, I cannot wait to eat spirulina today."

But it tastes really good in guacamole. I don't know if you've ever had this.

Dr. Lisa Mosconi: No, I never tried it.

Shawn Stevenson: Yes, put a little- but don't go too hard. It changes to a weird color, it's like not from this planet.

Dr. Lisa Mosconi: For sure.

Shawn Stevenson: But it actually tastes really good, it's a good complement, and it makes sense. Spirulina is one of the primary kind of protein sources for like the Aztecs. You know, just don't get me started.

But also for me, I get this in a formula along with chlorella, moringa, and ashwagandha in this product called Organifi.

And so this is the only- one of the big issues is like what are they doing to the supplement before they get it to you? Like is this actually going to be a whole food kind of extract?

Or is it like heated, fried, dyed, and it's just like- or a synthetic source of these nutrients? And so they do a low temperature process, and they actually make it taste good.

So I've tried literally probably twenty different green blends over the years, in the last fifteen. Finally one that tastes amazing, my kids like it, getting their dose of spirulina, and moringa, and all that good stuff.

And I highly recommend folks check it out. It's www.Organifi.com/model. That's www.Organifi.com/model, you get 20% off with Organifi, alright?

So head over, check it out. It feels out. Like it makes you feel clean inside. Alright, so-

Dr. Lisa Mosconi: I put it in my energy bars.

Shawn Stevenson: You do?

Dr. Lisa Mosconi: I make energy bars.

Shawn Stevenson: You make your own?

Dr. Lisa Mosconi: I make my own. I don't trust-

Shawn Stevenson: We do that, too.

Dr. Lisa Mosconi: I'll send you the recipe, and I put spirulina, so really my daughter also likes them very much.

Shawn Stevenson: Oh, I love that. What else do you put in these, by the way, since you're talking about it? What else goes into the-?

Dr. Lisa Mosconi: So I have bran- oat bran, flax seeds.

Shawn Stevenson: Yeah, Omega-3s, this ALA.

Dr. Lisa Mosconi: No, I don't do supplements.

Shawn Stevenson: No, the flaxseed.

Dr. Lisa Mosconi: Oh, the flaxseed for Omega-3. Yes.

Shawn Stevenson: But it's ALA though.

Dr. Lisa Mosconi: ALA, yes. It's the vegan or the vegetarian plant-based source of Omega-3s. So what happens is that the brain has access to ALA, EPA, and DHA - all three of them - but needs DHA the most.

So the only natural source of DHA is from fish, and seafood basically, but the brain can use the other two forms and convert them into DHA.

The problem with ALA is that over 75% is lost in the conversion. So when somebody's vegan and says, "Can I take this ALA, the plant-based Omega-3 supplements." Yes, you can, but you need to take more to achieve the same result because 70% is lost.

And one thing to keep in mind is that Omega-3 actually interacts badly with specific medications. Blood thinners like Aspirin, so it's very dangerous to take the supplements.

Shawn Stevenson: Wow, got to take that into consideration. Wow.

Dr. Lisa Mosconi: Yeah, so people over sixty actually it's a big health hazard.

Shawn Stevenson: And so folks that are taking a vegan approach is also the algae oils potentially could be-

Dr. Lisa Mosconi: Yes.

Shawn Stevenson: Helpful as well.

Dr. Lisa Mosconi: But you need more because it's ALA.

Shawn Stevenson: Because you need more, yeah. It's still the conversion.

Dr. Lisa Mosconi: Yes.

Shawn Stevenson: Or just getting more of a concentrated dose. So these are those areas of like whatever- it might be ethics or whatever the case might be where you've got to get into like, "What am I doing for myself as a human versus my belief system," and finding that line that you can straddle to make sure that you're still taking care of yourself.

Dr. Lisa Mosconi: Yes.

Shawn Stevenson: So last one I'm going to ask you about. Again, there are so many things I want to ask you about.

Dr. Lisa Mosconi: More.

Shawn Stevenson: Is- actually really quickly, can we talk about phospholipids?

Dr. Lisa Mosconi: Sure. So phospholipids are actually- that's really the main brain fat. We always think about cholesterol, but the brain consists more of phospholipids, and it really is so important because they keep your brain cell membranes fluid and flexible, which is crucial for the brain to function.

And there are many different kinds of phospholipids. There's phosphatidylcholine, there's phosphatidylserine, so they're a fatty acid group connected with either amino acids or vitamins.

Shawn Stevenson: Okay.

Dr. Lisa Mosconi: Right? And so phosphatidylcholine, which is perhaps the most important in many ways, has the same origin. Basically it comes from foods that are very rich in Omega-3 fatty acids, but also sweet peas are really good sources.

Shawn Stevenson: Interesting. Interesting.

Dr. Lisa Mosconi: Crustaceans like crab, and all kinds of different fish and shellfish, but mostly sweet peas. There was another one, I wrote it down- oh, cucumber.

Shawn Stevenson: Cucumber? Really?

Dr. Lisa Mosconi: Yeah.

Shawn Stevenson: Surprise, surprise.

Dr. Lisa Mosconi: Not as much as fish, but you still get some. And also there's thing, tapioca?

Shawn Stevenson: Tapioca, yeah.

Dr. Lisa Mosconi: Yeah, so that's also a very good source.

Shawn Stevenson: Wow.

Dr. Lisa Mosconi: I don't know, I never tried it.

Shawn Stevenson: So it can be- it's great for like baking, you know?

Dr. Lisa Mosconi: Like flour.

Shawn Stevenson: Yeah, especially like if you're using alternative flours instead of-

Dr. Lisa Mosconi: Wheat or white flour.

Shawn Stevenson: Yeah, bleached, fried, dyed, fricasseed flour. But you know, like people are using coconut flour, it can really help to kind of add that missing note.

Dr. Lisa Mosconi: It gives it more texture.

Shawn Stevenson: So last one I want to ask you about - which wasn't the phospholipids - the Omega-3s. So let's circle back to the Omega-3s, and talk about- you mentioned this several times, but let's pin down best sources, because it's essential.

Dr. Lisa Mosconi: Right, so the best sources, it depends if we're interested in animal sources or plant sources. What do we start with? Animals, because they're better.

Shawn Stevenson: Both.

Dr. Lisa Mosconi: Right? So fish. Caviar is my number one, or salmon roe, or fish eggs are really the most- the highest and richest sources on the planet.

Salmon is good, but not nearly as rich frankly. Herring, mackerel, sardines, anchovies, trout. Fatty, fatty fish.

Shawn Stevenson: Got it, and then for the vegetarian side we've got chia.

Dr. Lisa Mosconi: For that source it's flax seeds. Chia, yes, but flax seeds are better. Flax seeds and hemp seeds.

Shawn Stevenson: And hemp, yeah. Big fan.

Dr. Lisa Mosconi: Big in California.

Shawn Stevenson: Yeah.

Dr. Lisa Mosconi: Chia seeds, walnuts, soybeans, and then oats. Spirulina, that's what I was trying-

Shawn Stevenson: Spirulina.

Dr. Lisa Mosconi: Yeah, it's actually a good source of Omega-3s.

Shawn Stevenson: Wow, so cool.

Dr. Lisa Mosconi: And wheat. Wheat actually delivers- grains and others are actually good for you.

Shawn Stevenson: Yeah, so- and there's so much in the book, and I want to share this study really quickly. A landmark study of 6,000 participants ages sixty-five years or older showed that people who consumed low quantities of Omega-3s had a 70% higher risk of developing Alzheimer's than those who consumed more Omega-3s.

And you have several insights like that, and you even talk about the wheat perspective as well in your book.

And so just to get a holistic understanding, and to look at- to look at some things that- and think about things we've never thought about before, I think that everybody should definitely pick up a copy of 'Brain Food.' I think it's phenomenal, and I've got one final question for you.

Dr. Lisa Mosconi: Okay.

Shawn Stevenson: Before I let you go.

Dr. Lisa Mosconi: Is it difficult?

Shawn Stevenson: No, not at all.

Dr. Lisa Mosconi: Okay.

Shawn Stevenson: I want to ask you personally, what is the model that you're here to set for other people with how you live your life personally?

Dr. Lisa Mosconi: So I think it's really about knowledge. That's what I'm most interested in; truth. I'm very curious, I've always been, and I have a hard time just going with trends.

Like there are so many trends out there, and I really, really appreciate originality, being your own self, and just the understanding that everybody's different, and everybody has different risks, and different stresses, and different strengths, and really know yourself, and embrace yourself.

Don't just follow what other people say blindly, because it's- I think it's a very poor use of your time and resources in some ways.

I think it's very important to just really understand things, and ask questions, and get smart about things, and then make your own choices and your own decisions.

Take the advice, but be critical about what's being said, especially when it comes to food. There are a lot of people with a lot of different opinions.

Shawn Stevenson: Yeah.

Dr. Lisa Mosconi: You know, credentials do matter in some ways. Not always, not all the time, but they do set a good basis for credibility and experience mostly.

I think experience- so knowledge and experience, I really strive to have some of both.

Shawn Stevenson: And you've done it well. Thank you so much.

Dr. Lisa Mosconi: Thank you.

Shawn Stevenson: And can you let everybody know where they can find your book?

Dr. Lisa Mosconi: They can find my book on Amazon and wherever books are found, in all bookstores, and my website is www.LisaMosconi.com. There's more information about the research, and if anybody would like to get in touch and talk more, I'd be happy to.

Shawn Stevenson: Awesome. Lisa, thank you so much.

Dr. Lisa Mosconi: Thank you.

Shawn Stevenson: Dr. Lisa Mosconi.

Dr. Lisa Mosconi: Thank you for having me.

Shawn Stevenson: Everybody, thank you so much for tuning into the show today. I hope you got a lot of value out of this. Again, this is one of my top ten books of the year.

So much insight, so many of those small things that help to affirm some of the things you might have been interested in, or thought that you knew about, but bringing some real solid evidence to it.

And also dispelling some myths, right? So understanding like your brain- all the fat you're eating, for example, is not just automatically being used by your brain.

Your brain has the capacity to make its own cholesterol, right? This is not going to be something that is going to be influenced by how many eggs you eat. Alright?

So these little insights can really be a curative factor in us understanding- or getting rid of the misunderstanding about our brains and really mastering our health.

And so I hope you got a lot of value out of this episode. If you did, please share it out on social. Tag me, and let me know what you thought about the episode; Instagram, Twitter, Facebook, all that good stuff, and just share it with the people you care about.

You know, again, one of the biggest fears that people have is- it's not necessarily the fear of death, it's the fear of in essence dying partially while we're alive, and not being able to remember the people that we care about.

And also from the other perspective, of the people that you love losing these faculties, and so we want to make sure that we're not just adding years to our lives but also more life to our years.

And I think that this is one of the big solutions, is learning more about how our incredible brains work. So I appreciate you so much, thank you so much for tuning into the show today. 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.

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