

# **THE MODEL HEALTH SHOW**

**EPISODE 497**

## **Inflammation Masterclass: The Brain-Gut-Liver Connection & Anti- Inflammatory Superfoods**

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**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. On this episode, we're diving into an inflammation master class. Going to be breaking down what inflammation actually is and how it's a contributing factor to a myriad of different health issues, and of course, what we can do to actually manage and even reduce these chronic episodes. And most importantly, we're going to address what we can actually do to reduce our rates of chronic and acute inflammation.

First and foremost, we need to demystify what inflammation actually is. An inflammation is the biological processes that your body uses to defend itself from harms, such as infections, injuries, and even toxicants. These processes of inflammation include the following factors; One, it can increase the activity of immune cells, such as B-cells and T-cells, so it's going to increase immune cell activity to address this inflammatory component. This inflammation is really sending out a distress signal to your immune system, to your immune cells, to take action to address either an infection or an injury or even some kind of exposure. Also, the processes of inflammation can include increased production of antibodies and cytokines coming from our immune cells.

Also, inflammation can lead to increased blood flow to the damaged area, and inflammation can even increase the production of stress-related hormones. The word inflammation itself is derived from a Latin root word meaning, "To set on fire." And oftentimes, these are some of the symptoms that we might experience, a burning sensation, pain, swelling, aching, congestion, if we're talking about in relationship to a viral exposure or a bacterial infection. We can start to have inflammation showing up in the form of congestion. But in many cases, you may not even be aware that the inflammation is taking place until a significant part of our health gets incinerated.

A lot of inflammatory activities happening behind the scenes, especially when we get into the state of chronic low-grade inflammation that's so epidemic today in our society. Inflammation can also contribute to abnormal blood pressure and blood sugar, it can contribute to abnormal hormone function, it can contribute to a reduced cognitive function, and so much more. This is why addressing inflammation is such an important topic today. Oftentimes, it seems very mysterious, this ghost in the machine, "Oh, inflammation's coming to get me," but in reality, inflammation is a natural biological process that our body uses in many ways to heal us. However, when inflammation starts to become chronic, when it's taking place in places that it shouldn't be, you shouldn't be having inflammation, that's where we can run into a lot of problems.

So let's dive in a little bit deeper and talk about acute inflammation versus chronic inflammation. Acute inflammation is the increased inflammatory activity from, again, a natural short-term response to an infection, or injury, or toxicant that usually subsides within a matter of hours or even within a matter of days. But when the inflammatory process lingers, keeping your body in a constant state of alert, essentially, this is the foundation for chronic inflammation, that right. And as we'll discover today, chronic inflammation plays a major role, again, in a myriad of diseases, including Alzheimer's disease, diabetes, autoimmune diseases, obesity. We're going to talk about the inflammation component and relationship there as well, and a lot more.

Now, this might sound surprising, but inflammation is actually essential for our health. It's essential for our evolution, for our survival. It's your body's way, again, of putting out a distress signal to call on your immune system. He's getting on the bat phone to call up your superhero immune system to come and help out to help with repairing damaged tissues or defending against foreign invaders and infections such as viruses, bacteria, fungi, etcetera, etcetera. And without inflammation, damaged cells and tissues would never heal. Without inflammation, even minor infections could become deadly. So again, inflammation is a vital part of our overall health and our evolution as a species.

But and this is a big old but... When inflammation, when that inflammatory process, goes on for too long, and/or when it's venturing into places where it's not needed, it can become dangerously problematic. Today, we're going to target the three major areas that help to regulate inflammation but are also severely compromised by inflammation when things get out of balance. And of course, we're going to cover some clinically proven strategies to help to address each one of these areas. And first and foremost, we're going to kick things off; One of the major organs that regulates inflammation in our bodies but is also one of the fastest-growing epidemics of inflammation is something called neuroinflammation. Neuroinflammation; This is inflammation of the brain and nervous system. This is a silent epidemic that's a contributing force to a myriad of neurodegenerative diseases and even obesity.

Scientists at the Albert Einstein College of Medicine reported that hypothalamic inflammation, so this is inflammation within our brain, specifically targeting and affecting our hypothalamus, which is a master regulator of our endocrine system, and really an interface for our endocrine system and nervous system. Researchers at the Albert Einstein College of Medicine reported that hypothalamic inflammation is a double-edged sword in nutritional diseases.

The study authors reported that systemic inflammation from things like metabolic dysfunction and excessive body fat leads to brain inflammation, and brain inflammation itself leads to

metabolic dysfunction and excessive body fat. So inflammation in our brain is a major contributing force to our rampant issues with obesity and with the excessive weight gain.

And there aren't a lot of programs out there that are talking about the importance of addressing the inflammation in our brains to help us to lose weight. And also, we can rest assured that when we're carrying around excessive weight or venturing into a state of obesity, we can rest assured that our brain is experiencing inflammation, and the question is, well, if this is the case, why am I not feeling some of those symptoms that we talked about, of pain in my brain? Well, the interesting thing about the human brain is that it can tell you about pain elsewhere in the body, anywhere else, pain in your pinky toe, pain in your shoulder, pain in your ear lobe, pain in your teeth, your brain can tell you about that pain that's basically that extension of the nervous system branching out throughout your entire body and sending that information back to your brain for processing.

But your brain itself does not have pain receptors. Your brain, as crazy as it sounds, does not have pain receptors itself. So, if your brain is hurting, if your brain is inflamed, oftentimes, when we finally find out that this is the case, oftentimes, it's too late because there aren't a fire alarm system that are kind of taking place in the brain that can signal when we're experiencing this inflammation in the brain. However, what we will see are downstream effects, outer effects, like for example, obesity, like for example, high blood pressure, high blood sugar, like for example, cognitive decline. These are all indicative forces that we very likely are experiencing some inflammation in our brain. Now, the human brain itself is absolutely incredible, but it's also very protective, so it'll tell you the secrets of what's happening with the rest of our body, but it's very private itself.

It keeps its own personal life off the grid. It's very protective, it's encased. It's the only organ that's fully encased in hard-shell, so we have that built-in helmet, the cranium that's protecting it. Through our evolution, we've really just developed this very protective organ because it's regulating and managing so much, but it's also delicate. And the things that we're exposed to today, so much abnormal exposure is finding its way in and damaging our brain as we're going to talk about more. So again, hypothalamic inflammation is one of the leading contributing forces in our obesity epidemic, and our obesity epidemic is causing rampant issues with hypothalamic inflammation, and the hypothalamus is this interface with our nervous system and our endocrine system.

And our endocrine system is related to the expression and transmission of hormones, and that plays a major role in everything from managing our body composition to our state of emotional health and well-being, and the list goes on and on, and so that interface in the nervous system is really monitoring, modulating picking up influences and exposure from our environment, our internal and external environment and sending that data and feedback. So,

it's a big controller of how we're responding and interacting with the world around us and with interacting our cells, how they're interacting with each other. So obviously, this is a major, major, powerful force in our body, but it's also a major concern if we're talking about inflammation damaging this part of our body.

Now, the question should be, with the brain being so protective, how does this inflammation actually take place in the brain? Well, one of the areas that actually protects the brain from the inflammation can itself be damaged by excessive inflammation. Through issues like neuroinflammation, exposure to toxins, and nutritional deficiencies, the blood-brain barrier, that's a primary security system for the brain, can become dysfunctional over time. By not allowing the right things in, when the blood-brain barrier is damaged or keeping the wrong things out, a damaged blood-brain barrier can further exacerbate inflammation, poor brain health, and cognitive decline. So, what is this blood-brain barrier? How does it actually work? Well, the great analogy for the blood-brain barrier is like a very advanced, high-tech, security-laden tollbooth that's allowing in, in its superhighways of different lanes, we'll just say there's a million different lanes, it's only allowing certain things into the brain, and it has to have the right identification.

And at each one of these toll centers is a security guard, and you could picture whatever security person, high level, elite person you could think about, whether it's Dwayne the Rock Johnson, whether it's Debo, whether it's... You name it, John Cena, I guess? I don't know if he's popping right now, can't see... Can't see me. Apparently, he's invisible. But whoever it is, whoever you've got in the metaphor tollbooth, they are really dedicated to their job and they're really on top of everything. So, it's kind of like the absolute barrier. The permission slip, the guard of allowing what's getting into the brain and also the evacuation, what are the things that are able to be removed from the brain as well.

So, the blood-brain barrier, and this is absolutely critical, because the blood-brain barrier itself is really a complex dynamic system that is surrounding most of the blood vessels in the brain itself, and these specialized gates that we talked about only allow in very specific things. They only allow in water, certain gases like oxygen, and also specific nutrients via carrier proteins that have to bring them in. Only very specific nutrients can enter the brain, every nutrient that we know about, all the cool stuff that we can bring in from our diet and our nutrition protocols, the brain has its own diet, we call it neuro-nutrition, it's very choosy. Again, the security guards at those tollbooths are very choosy on what they're allowing into the brain itself.

Now, there are also, and this is a huge key here, there are a lot more mitochondria in the endothelial cells that make up the blood-brain barrier, because the blood-brain barrier itself comes from endothelial cells, very much like our capillaries, very much like our circulatory system, this is what's making up this security system, very advanced, but the key is there's a

lot more mitochondria in these endothelial cells of the blood-brain barrier than elsewhere in the body, and this is a big reason why the brain itself requires, it demands, so much more energy than anywhere else in our bodies. Now, our brain is only making up about 2% of our overall mass, but it's consuming upwards of about 25% of the energy intake from our food, of the caloric intake that we're bringing in, it is a very, very hungry organ.

And even the blood-brain barrier itself is ravenous for energy to help to regulate and maintain it, so you can just start to think what happens when we have nutrient deficiencies, key nutrient deficiencies, that enable the blood-brain barrier to sustain itself. And also, on a recent episode of The Model Health Show where we talked about really a masterclass on looking at what the brain is actually made of, the three types of primary fats that the human brain is made of, we highlighted a sub-type of glial cell called astrocytes. Astrocytes, and these... If we think about our brain being like a galaxy, a solar system, these astrocytes, and even the name astrocytes, shoutout to The Jetsons, these astrocytes have these miraculous capabilities of even they're a primary producer of cholesterol in the brain, for example, which the human brain is more concentrated in cholesterol than any other place in the body as a specific organ.

And these astrocytes are making cholesterol on demand for all the processes that the brain needs to undertake, but these astrocytes and these are these star-shaped cells that are part of the central nervous system, and again, they're a sub-type of glial cell. So, we have neurons, we also have glial cells, these astrocytes outnumber neurons by five-fold in the brain. So, a single astrocyte can interact with up to two million different synapses at one time, just interconnecting all these different brain cells and activities, but astrocytes also, specifically the end feet, so they got these little weird feet that wrap around the brain's... The blood-brain barrier, they actually wrap around the brain's blood vessel, and they help to transport and bring nutrients to the neurons themselves.

So, thanks again to these astrocytes for their dynamic out-of-this-world capacity to help to feed our brains. They're also thought to aid in the development and maintenance of the blood-brain barrier. So we need to take care of our astrocytes as well. Now, these tight junctions of the blood-brain barrier, it's different from other aspects of... If we're talking about the endothelial cells, the blood-brain barrier, this endothelial function here have very tight junctions that don't readily allow immune cells even into the brain. The brain has its own immune system regulated again by the glial cells versus the rest of our body. So not even the blood-brain barrier won't even allow in immune cells. Now, the microglial cells that are the brain's own homemade regulatory immune system, these cells help to protect the brain from infections.

But degradation of the blood-brain barrier and neuroinflammation overall can cause a snowball effect of problems. The first step, now this is where we get into what can we do about

this inflammation because for the majority of our citizens, this is taking place at some degree. The first step in solving the issue of neuroinflammation and the damage of our blood-brain barrier is to remove the cause of the neuroinflammation in the first place. So let's cover the five most common contributors to neuroinflammation. The first of these major components that's contributing to neuroinflammation and the breakdown of the blood-brain barrier is excessive sugar consumption and insulin resistance in the brain. Harvard researchers have affirmed that the brain itself will gladly confiscate half of the sugar energy that's consumed in any given meal.

There are a myriad, a massive amount, of sugar gates, if we're talking about those tollbooths that allow sugar into the brain very rapidly. It's how we're hard-wired, we evolve this way, but we did not evolve having this kind of exposure to sugar that we now have today. Through our evolution, sugar was hard to come by, it was much harder to come by, and so your brain would gladly just sop it up, consume as much sugar as it can from any given meal to help run all these kind of glucose-driven processes in the brain. But today, the amount of sugar that we can consume just in one sitting, we can consume easily 16 teaspoons of sugar just from a regular soda that's out there in the convenience stores and have that along with a little snack of some donuts or some chips or whatever the case may be, we're adding on another 10, 12 teaspoons of sugar.

And just think about that in the context of, again, what are we exposed to today and why is it able to create so much devastation so quickly, it's the fact that the brain allows in sugar very quickly, but we've not had this kind of exposure to sugar before, and so we're just now starting to understand the detrimental effects that it's having on our brains. We oftentimes think about the out-picturing of this with obesity, with excessive belly fat, with those types of things, but we don't think about the damage that it's doing to our brains, and this is one of the primary places that that fire of the inflammation is really, really getting set off. Sugar consumption in the form of these processed foods and sodas and things like that, they're like little arsonists, jumping up into the brain and setting things on fire.

They're like little Billy Madison's if you've ever seen the classic movie, Adam Sandler, Billy Madison. Him and his friends got together and they would go and find some dog poop and then they would put it in a paper bag, light it on fire on somebody's porch. Alright. Consuming these types of foods are like little Billy Madison's up to mischief, getting the bag of poop and lighting it on fire right in our brain, and we oftentimes don't realize that it's happening until it's far too late. Now, since sugar is always funneling into the brain and throughout the brain itself, insulin activity in the central nervous system has become a major topic of discussion today. Now, research published in the journal *Frontiers in Endocrinology* states, "Insulin in the brain contributes to the control of nutrient homeostasis, reproduction, cognition, and memory, as well as neurotrophic, neuromodulatory, and neuroprotective effects."

The research has noted that excessive glucose can directly lead to insulin resistance extending to the central nervous system itself, also causing higher incidents of type 2 diabetes and a dramatically increased risk of Alzheimer's disease. In fact, they declared in this report, "A close association between type 2 diabetes and Alzheimer's disease has been reported, to the extent that Alzheimer's disease is twice more frequent in diabetic patients, and some authors have proposed the new name type 3 diabetes for this association." So referring to Alzheimer's disease, this advanced neurodegenerative disease, referring to it now as type 3 diabetes, because of this insulin resistance taking place within the central nervous system.

Another study and this was published in Molecular Metabolism titled "Dietary sugars, not lipids, drive hypothalamic inflammation." This study details how obesity is driven by neuroinflammation in these particular animal models, and not driven by a higher-fat, lower-carb diet, but by higher-fat plus higher-carbohydrate and higher-sugar diet specifically. When the sugar and carbohydrate is ratcheted down, the inflammation is ratcheted down as well, and it's directly driven up when there's an increase in carbohydrate and sugar.

Now obviously the types of carbohydrate play a big role, whether it's coming from real whole food sources rather than the concentrates that they're doing in these very regimented animal models. But the higher sugar intake, essentially what they're finding in various studies is that it's setting the environment on fire, it is the causative factor, not lipids specifically, they mentioned this over and over again, it's not dietary fat. And now we got to keep all this stuff in context because are we talking about real whole-food-based fats that humans have been consuming for thousands of years? Or are we talking about highly refined fats that are found in a myriad of processed food that most folks are consuming? Because there's a difference there as well, but the bottom line, we got to keep all of this in context e is, sugar is a sure-fire way to set the environment on fire.

Now, a quick question here, how does this play out in the real world? Again, your brain doesn't have pain receptors, so how do we know that this is taking place? Well, Harvard researchers recently cited a study that linked excess sugar intake to an obstruction in cognitive abilities such as memory and learning. These are all great, very subjective, but we can also have objective measures as well, but just feedback that we might be experiencing some insulin resistance in the brain, that we might be experiencing some neuroinflammation, so paying attention to our cognitive health to just how our body feels, paying attention to our body fat ratio, our overall health. If we are experiencing a chronic disease, again, we can have a much higher probability that we're going to be experiencing some neuroinflammation as well, we've got to address this because our abnormal diet and some of the things we're going to talk about next are really causing this issue, but if we remove the cause, the body is so amazing at being able to reduce inflammation and heal itself.



So again, the first causative factor, one of the primary causative factors in our culture is the abnormal excessive amount of sugar consumption and insulin resistance that's also bleeding over and taking place in the brain. The next of these five major contributing forces to inflammation in the brain is highlighted in a meta-analysis published in the peer-review journal, Brain, Behavior, and Immunity. The scientists stated, "Alcohol abuse not only induces inflammation in the body and brain, but it also causes significant changes in immunity and increases susceptibility to a variety of infections." So the second one of these primary forces today is alcohol consumption, excessive alcohol consumption.

Now again, the research concluded that excessive alcohol consumption induces inflammation in our brain. A lot of folks don't really realize or don't want to acknowledge that alcohol is in the category of neurotoxins, confirmed neurotoxins, and it's able to cross the blood-brain barrier very rapidly. That's another little trick that alcohol has is it's able to make its way into the brain very quickly. This is why the first big effect from the consumption of alcohol is the release of endorphins. These feel-good compounds are a really big reason why light to moderate drinkers feel more relaxed, sociable, and even happy while drinking, but as we venture into a little bit more excessive drinking, even in the short term, even short-term overconsumption can trigger something called alcohol poisoning. And this doesn't get a lot of press, but there's a significant number that happens every year where folks are literally, their brain is kind of poisoned by alcohol consumption, this can interfere with parts of the brain that are responsible for basic life support functions like breathing, body temperature, and heart rate can all get kind of discombobulated from alcohol poisoning because it's able to make its way into the brain so quickly.

Now, it's also well-documented that long-term heavy drinking can cause higher rates of brain shrinkage. A 30-year analysis published in the BMJ found that even moderate drinking can have similar effects. The researchers use MRIs and uncovered that even moderate drinking over the long term causes shrinkage in the hippocampus. And this hippocampus is... This is really noted as the memory center of the brain. And the researchers stated that the amount of shrinkage appears to be directly related to how much a person drinks. So we just got to keep in mind that alcohol is a well-documented neurotoxin. It is what it is. Does this mean that we can't engage with it? The same thing with sugar. It doesn't mean that. But we definitely need to be much more conscientious about how we're interacting with these things and understand that these things that we're listing right now, these five things, some of their biggest insults can take place with damaging our brain. But this is oftentimes such a lower rung of the conversation when it really should be at the very top.

Alright. So moving on, so we addressed sugar and insulin resistance in the brain, we addressed alcohol consumption. Next up, and this one might be a little bit surprising, one of the major

contributors potentially to neuroinflammation and the breakdown of the blood-brain barrier is viruses. Viruses are well noted to be a causative agent of excessive inflammation. In some instances, depending on how the body is reacting to the particular virus, it's been established that viruses can cause disruption to the blood-brain barrier. And this is highlighted in the peer review journal, Trends in Microbiology. And recently research published in the International Journal of Molecular Sciences is highlighting the troubling discovery of SARS-CoV-2 interacting with the blood-brain barrier and entering the brain.

It's some concerning stuff, it really is. But we also have to keep in mind that this is really predicated on our overall susceptibility, because our body is immaculately designed to handle the exposure to a myriad of different pathogens, and this isn't what's being talked about enough. And the incredible amount of people whose bodies who were "asymptomatic", who didn't even experience symptoms in relationship to this particular virus, and also highlighting what the greatest susceptibility to the virus was, which according to the CDC, their most recent update, over 95% of the folks who lost their lives in association with SARS-CoV-2 had an average of four, four pre-existing chronic diseases and/or comorbidities.

We've got to keep in mind that the vast majority of people just having even a somewhat healthy and resilient immune system is not going to experience a breakdown or damage to their blood-brain barrier in association with this particular virus. But when our health, when our overall health, when we're experiencing a poor state of health, if we look at healthcare workers, for example, and this isn't talked about very much as well, one of the hardest hit, if not the hardest hit vocation in dealing with this virus, because they're there on the front lines, they're there to serve, but what's not reported, and this is according to the CDC, and we'll put this up for everybody to see, literally nine out of 10 of the healthcare workers hospitalized with SARS-CoV-2 had at least one pre-existing chronic disease. Nine out of 10. This isn't some little coincidence, it isn't like, look, interestingly, we found out two out of 10 or five out of 10. Nine out of 10. And about 75% of these folks were obese.

So we know that these are underlying susceptibilities that make us susceptible to viral infections and all that downstream effect if we're talking about the breakdown of our lung function, and right it has a tropism towards our lung tissue, but also what we really are realizing today is that SARS-CoV-2 is really creating damage to the endothelium, which we talked about with Harvard researcher and New York Times Best Selling author Dr. William Li recently on the show. So we'll put that for you in the show notes if you happened to miss it. But really highlighting this impact. So if we're talking about the endothelial being targeted, what is the blood-brain barrier made of? The same type of tissue. And so, obviously, yes, if we're susceptible to this viral... Virus infection, it can damage our brain, for sure. So you got to keep this in mind, keep this in context. This is yet another reason to really improve our health, to improve our resilience, to enhance and support the function of our immune system, and to

really work on getting ourselves, our families, and our citizens healthier. We become susceptible to not just this one thing in this one vanilla way. It's a dynamic susceptibility to all manner of things, all manner of infectious diseases and chronic diseases. This is just the popular one of the moment. There's going to be more things to come. We've got to get ourselves healthier.

Alright. Now we're going to move on to the fourth one of these major contributing factors to neuroinflammation and the breakdown of the blood-brain barrier, and this one is pesticides. Pesticides are designed oftentimes to be neurotoxic. But just to little things. Not to you, but to little things, these little pests, these little organisms. But now we know there's a massive growing amount of data now showing how these are also neurotoxic to humans as well. And it doesn't take a rocket scientist to figure this out, because we're made of very small things. If we're even talking about our microbiome, which our microbiome isn't just a gut microbiome, we also have a microbiome of our lungs, we have a microbiome of our skin. We are teeming with bacteria. And we... The current estimate is somewhere around... We have four times more bacteria than we have human cells. Upwards of... The biggest estimate is like 10 times more, but it's been ratcheted back a little bit. But this is supposed to be a symbiotic relationship.

Bacteria really creating compounds in us for us oftentimes and having these protective factors in influencing so many different things; Influencing the health of our brain, influencing the health of our gut, influencing the health of our lungs, for example, again, mentioning the lung microbiome, so it's a very important thing and a delicate thing that we can haphazardly be damaging by consuming things or being exposed to things that are designed to kill small organisms. We take one of the most popular forms of pesticides, and we've talked about this on the show before, and this is because this should be banned at this point. It was in the process of being banned but then it got caught up in red tape. It's called chlorpyrifos, and chlorpyrifos works by attacking insects' nervous system and has been repeatedly shown to create side effects in people who are exposed to chlorpyrifos.

According to researchers at Columbia University, one of the most devastating issues is seen in pregnant women exposed to chlorpyrifos, finding that it led to significant impairment in the development of their children's brain. We've got to understand that this isn't just some gossip at this point, this isn't some Wendy Williams reporting on pesticides is bad for you.

No, we have mountains of science now affirming this, and this would... Again, anybody who's aware of basic tenets of human health would know that this is probably going to be a problem, but also these big chemical manufacturers, food manufacturers, the EPA who's supposed to be regulating these things that have allowed... Right now with the EPA, we've got about 40,000 chemicals approved for use in pesticides, approved by the EPA, Environmental Protection Agency. Come on. Come on. We are a part of the environment. Are these things protecting us?

It's just really about growing more food, faster, genetically modified foods, dwarf wheat, GMO corn, all the list goes on and on. Increase the yield, make more money for the shareholders. These food manufacturers, your health is not their priority. Their priority is to make money, that's the name of the game. And so whatever can be done to cut costs, like using pesticides like this, and they can keep it on the low, keep it on the DL, they're going to do it. They're going to keep doing it until we call the things out. Until we say no. Until we say enough is enough and stand up for this stuff.

The first thing we can do is vote with our dollar. Don't buy it. Don't buy it. Force them to change what they're doing. We can't easily get rid of the multi, multi, multi, multi-billion dollar organizations, but they're often forced to adapt and change and meet the demands of the people, so they can stay in existence and continue to make money. So when we say enough is enough with pesticides and fungicides and herbicides, rodenticides, all these things that are designed... Again, many of them are neurotoxic. Many of them are disruptive to the endocrine system. When we say enough is enough, that's when things can change. So also again, noting that this is definitely one of the contributing factors to neuroinflammation is pesticide exposure.

Now we're going to look at the final one of these five major contributing factors to neuroinflammation and the damage to our blood-brain barrier as well. As we noted, inflammation resulting from obesity can contribute substantially to neuroinflammation and disrupt the inflammation regulatory systems in the brain. So obesity is another major causative factor in neuroinflammation. Now I wanted to highlight this again because I want to target something very specific here, which is the fat cells themselves can be a major instigator of inflammation. And I actually highlighted this because it's so important in my most recent book, Eat Smarter, and I really dove in and address this issue, address many of these different issues that we're talking about today, what are the underlying contributing factors to inflammation.

So I'm going to read a bit for you from Eat Smarter. Scientists from the Methodist Hospital in Houston, Texas, unveiled concerning new research published in the journal, Cell Metabolism. The report established that when it comes to excessive inflammation and fat storage, the fat cells themselves are at least partly to blame. We've established that inflammation is a natural response of your body to injury or infection, and even though your fat cells may be in good working order when they are overburdened, they appear to issue false distress signals that can send your immune cells into a tizzy. The study found that fat can trigger heightened activity with your immune system and too many overfilled fat cells can make your body think that you're infected. This is yet another way that body fat can become a vicious circle of inflammation and more fat storage as a result.

The lead investigator, Willa Hsueh, MD, stated, "Your fat cells are doing the thing they're supposed to do, storing energy, but reacting negatively to too much of it." This again, stresses our need to implement methods that reduce body fat and reduce inflammation collectively. Managing inflammation is like playing with fire. We need just enough to keep your house warm, cook, and keep everything running, but when it's in excess, it can quickly burn your metabolic house down.

So again, that's directly from Eat Smarter. If you don't have a copy, make sure to pick it up today. And it's highlighting how our fat cells themselves can be a contributing force to inflammation and why we need to target reducing inflammation in order to transform our body composition, improve our cognitive function, and so much more. So now, let's get into some of the clinically proven ways that we can address this neuroinflammation, that we can address the inflammation and damage to our blood-brain barrier. What can we do to repair these things?

Scientists at Auburn University published ground-breaking new research asserting that oleocanthal-rich, extra-virgin olive oil is able to restore the function of the blood-brain barrier. Right? There are very few foods that have been analyzed that can do something so incredible. There is an affinity that olive oil has, to repairing and supporting the blood-brain barrier. Let's take it a little bit further. The other research cited in The Scientific World Journal, reaffirms olive oil's ability to reduce blood-brain barrier hyper-permeability, right? So the blood-brain barrier's supposed to have these very, very tight junctions, but the damage that can take place through inflammation is one of the things that starts to create hyper-permeability, where things are getting into the brain that should not be there, leading to a very quick domino effect of problems. So olive oil has been found to reduce this hyper-permeability and also restore function of the blood-brain barrier. Shout-out to olive oil.

Now, the key here is the quality, it's always about the quality, alright? We you want to make sure that our olive oil, we need to keep this thing in mind, it is photo-sensitive and it's also heat-sensitive, right? We can cook with it, but only to a certain degree, and if we're talking about the benefits of olive oil... It's going to be extra virgin, so it's cold-processed alright? And it's done like that for a reason because these oils, you know, the mono-unsaturated fats, for example, they're pretty sensitive.

Alright? So we got to be mindful of that, and this is why it's also primarily bottled in dark glass because it's also photosensitive as well. So we want to avoid getting olive oil that is bottled in clear containers and also that is bottled in plastic, because of that leaching that could take place and we might be bringing in a little bit of bisphenol A, alright? So this kind of endocrine disruptor that's able... We know now it's clinically proven to fit into receptor sites in our bodies for estrogen along with our healthy olive oil, right? So we don't want to get oils that

are bottled in plastic as well. So... Now, what is the amount here? Well, the research indicates it's about two to three tablespoons a day can have some of this therapeutic effect with helping to repair and support the health of the blood-brain barrier. So again, we want our olive oil in dark glass containers and two to three tablespoons a day, ideally, we're going to use it that as a "finisher" for our meal, so this is after the meal is plated and then you drizzle on some cold-processed, extra virgin olive oil, or use it to make salad dressings, things like that.

You can cook with it, but again, if you really want to get the maximum benefit from our olive oil, we want to really make sure that it stays extra-virgin, alright, that's the key. So again, it's not just the food itself, it's how it's processed, alright? It's the sourcing, it's the quality, alright? So extra-virgin olive has a really powerful affinity towards reducing neuroinflammation. Next up here on this list of specific foods that can really help to address and reduce inflammation targeting the brain. The next one is spirulina. A recent study published in PLOS One revealed that spirulina has a potential to, one: Improve neurogenesis in the brain, which is the creation of new brain cells, and two: Reduce neuro-inflammation. Big emphasis on this second one. These are two very remarkable attributes, and not to mention that spirulina is also loaded with amino acids and other nutrient precursors to actually help to make new brain cells, to actually help to make neurotransmitters. Spirulina is a really, really interesting food, and when we're talking about brain health overall, it's been utilized for thousands of years. It's a really dense superfood, algae, and it's 71% protein by weight packed with amino acids and it is the most protein-dense food in the world.

Again, but we're talking about by weight, it doesn't weigh that much, but it's just loaded with abundance of amino acids, and we're talking about the building blocks of our hormones and neurotransmitters, they're made from amino acids. So spirulina is just really hitting so many different notes here, but most importantly for this context, is its benefit in reducing neuroinflammation. I'm a major, major fan of spirulina, been utilizing spirulina for almost 20 years now. It's one of my all-time favorite things. I love spirulina, and also chlorella has some of these interesting benefits as well that go hand-in-hand with spirulina, so it's another superfood algae, really dense in chlorophyll, thus the name, chlorella, and it also has the growth factors there in chlorella that really help with the creation of new brain cells and that vein as well but also helping to detoxify some of the toxicants and heavy metals that we're exposed to. So I can go on and on, and I get those together in one, in a formula, in a green juice formula, that tastes amazing because it could be a tough on-ramp for people if they're going from white castles to here's some spirulina.

We got to have a little bit more of a bridge here, so enjoying the process of getting well, and so the green juice formula from Organifi is just... I think it's an absolute no-brainer at this point to make sure that we're getting in a super concentrate of these superfoods, that's processed correctly, cold-processed, and also something that tastes good. My oldest son has Organifi's

green juice every day. As long as we have it on the shelf, he has it every day. He's a high performing athlete, he's doing his thing, and the thing for him is like I see him doing this thing, he's really kind of tuned in and honed in on his own body and things that make him feel good with his performance, and so he really loves the green juice as well, so head over there and check 'em out, it is [organifi.com/model](http://organifi.com/model) That's O-R-G-A-N-I-F-I.com forward slash model. You're going to get 20% off their green juice formula, alright, right now, head over to [organifi.com/model](http://organifi.com/model), 20% off their incredible green juice formula with these incredible, proven... Clinically proven superfoods that help to reduce neuroinflammation.

Alright, moving on. Another one of these foods that really helps to reduce neuroinflammation is broccoli. Listen to this, broccoli is an excellent source of nutrients called Isothiocyanates, and these powerful compounds have been found to help to reduce brain inflammation and provide protection against neurodegenerative diseases. Alright, so broccoli, it's got a crown, right? The broccoli crown, it's good for that brain. Alright, so that's another one that helps to reduce neuroinflammation. Another one... This is really interesting, a 2014 meta-analysis found that polyphenols in honey, are able to directly improve apoptotic activities while attenuating microglia-induced neuro-inflammation.

So it helps to ratchet down that inflammation in the brain. Honey polyphenols are also noted to have nootropic effects, such as memory enhancement. Now, the paradigm that we're experiencing today with all this highly refined processed sugar versus something that's been utilized for thousands of years if we're talking about honey, very, very prized in many cultures. Today, it's not even... It shouldn't be an alternative, this should be a primary thing because it actually has some really powerful effects on healing our brain, reducing inflammation in our brain, and also improving our memory. Now, the key here is the same thing with everything else, the quality matters, we want to make sure that we're getting our honey from a place that's screening for pesticide residues, that's screening for heavy metals. And for me, I want to make sure that I'm getting the cleanest products possible because it's... Raw honey is the key. In these clinical trials, it's raw honey. So without that process of cooking the mess out of stuff to try to kill everything, we want to make sure that we're not consuming any toxicants along with this very, very powerful food. So the honey that I use uses third-party testing for over 70 pesticide residues that are commonly found in other bee products, and this includes pervasive invaders like even DET. And also they test for bacteria like E Coli, Salmonella, and make sure that you're not getting any of these nefarious things along with your honey. So for me, it's the bee-powered superfood honey from Beekeepers Naturals. That's my favorite honey. I can't even tell you... I've had so many different honeys over the years, I can't even tell you how much I love this freaking honey. So it's not just the honey itself and the highest quality honey you've ever had, but it also has propolis in there. Royal jelly, it's like this superfood combination.

And so you also get 15% off when you use the code "MODEL", go to [beekeepersnaturals.com/model](http://beekeepersnaturals.com/model), that's B-E-E-K-E-E-P-E-R-Snaturals.com/model. So that's [beekeepersnaturals.com/model](http://beekeepersnaturals.com/model), you're going to get 15% off their incredible bee-powered honey, and also they have some remarkable nootropics there based on royal jelly, so their bee smart formula and also, one of my all-time favorite things that I use all the time right now is their propolis. They have an incredible propolis spray, which has over 300 active compounds that are in the propolis, specifically the polyphenols in there are well documented to reduce inflammation and fight disease. Even more specifically, polyphenols have been proven to inhibit the activity of coronavirus. This is according to recent data published in the peer-reviewed journal, Archives of Virology. Another study looking at this effect was published in the peer-reviewed journal, Antiviral Chemistry, and Chemotherapy. They revealed that propolis has significant antiviral effects specifically in reducing viral lung infections. Need I say more? This propolis is incredible. Alright, so go to [beekeepersnaturals.com/model](http://beekeepersnaturals.com/model), get 15% off.

Let me share one more food with you that has this targeted activity for reducing neuro-inflammation, this is based on a randomized placebo-controlled trial conducted by scientists at UCLA, finding that turmeric appears to reduce brain inflammation and improve memory and attention span specifically, the compound found in turmeric, isolated from turmeric, curcumin. So turmeric can be powerful, something right there in our spice cabinet, but also you can get great supplements that are concentrates of turmeric. I like to get a supercritical extract, Organifi has a really great one there as well. So turmeric is really, really remarkable, one of the things I use multiple times a week, I'm taking a turmeric supplement and adding it generously to different meals as well. So these are all foods that have peer-reviewed evidence, clinical evidence, affirming its effectiveness for reducing inflammation in our brain with our brain controlling and regulating so many things about everything else in our bodies. So it's a primary point of emphasis, this is why this matters so much.

And to close things out, we're going to address the two other areas that are regulatory for inflammation, but also are deeply damaged by inflammation, causing all kinds of systemic and metabolic damage. And the next one here is liver inflammation. Many people are surprised to find out that liver damage is creeping its way, inching its way into the top 10 causes of death here in the United States. Our liver is taking a beating right now, and you would understand this deeper if you knew how incredible the liver is. And even the name live-er live, it's one of the primary organs that is helping us to live. You cannot live without it. We need our liver desperately, it's running so many different things. And a few of the things that our liver is doing for us is number one, your liver acts as your internal cashier, storing extra glucose as glycogen and exchanging excess glycogen for fat. So it's working as an internal cashier for our metabolic energy. Your liver is also responsible for filtering your blood supply, it filters your entire blood supply approximately once every minute.



Thank you, liver. Also, your liver is producing important hormones and other compounds like insulin-like growth factor-1. And IGF-1 is a key player in our overall metabolism. And also it's not just responsible for producing certain hormones, it's also critically important in the breakdown of certain hormones, namely insulin, which is your body's primary fat-storing or energy-storing hormone so that it can be eliminated from our system. If our liver is malfunctioning or acting sluggish, getting rid of insulin, breaking it down, and eliminating it from our bodies can cause a lot of upstream and downstream metabolic problems. So again, your liver has a myriad of important jobs involved with our metabolism and so much more, but inflammation can definitely sabotage all of it. Recently updated research published in the World Journal of Hepatology revealed that inflammation is a huge contributing factor in liver damage, specifically growing issues like cirrhosis and non-alcoholic fatty liver disease are a huge inflammatory component leading to so much damage that we're seeing today, all of which include poor management of fat and non-alcoholic fatty liver disease. Again, this is... We often attribute the liver damage to some of the things that damage the brain. Alcohol? Same, same. And if we're talking about non-alcoholic fatty liver disease, how is it happening? Sugar.

Sugar is a primary driving force of the acceleration of non-alcoholic fatty liver disease, because the liver is involved, deeply involved, intimately involved in the management of glucose, so much so that your liver in its infinite wisdom will actually store glucose in the form of glycogen to help to protect the rest of your body so that you don't have a lot of glucose just running rampant in your bloodstream, tearing stuff up, it actually converts it and keep it tucked away. And if it needs to, it would even take a step further because we actually can't contain or hold that much glycogen as people think. We've got some muscle glycogen and some liver glycogen, but your liver can then if it needs to, it can literally create fat, which is really miraculous in a sense that it can convert it into something else so that they...it can get stored somewhere else, in a process called de novo lipogenesis, so that new creation of fat, so shout-out to the liver. But again, sugar, that rampant expression of sugar is just going to keep kicking your liver right in its crotch area and causing these issues, alright? I'm trying to give you a visual. The liver does have a crotch apparently. Now to make matters more concerning, researchers from Westmead Millennium Institute at the University of Sydney have concluded that visceral fat is directly associated with liver inflammation and insulin resistance. So addressing our overall health, really focusing on our metabolic health can help drastically to improve inflammation with our liver, but we also have to address improving and addressing the liver inflammation itself by removing the causative agents, which oftentimes is an over-excess of sugar, alcohol can deeply damage our liver because it's responsible for alcohol metabolism first and foremost.

And a couple of other things we'll talk about in a moment, but if you're curious, by the way, we've been talking about inflammation, if you're curious to what your levels of inflammation may be, a common marker that's often used to assess your inflammation levels are the blood levels, of something called C-reactive protein or CRP. High levels of CRP are indicative of heart

disease, acute infections, or even poor liver function because, and here's the key, your liver is actually where C-reactive protein is synthesized. This major marker for inflammation that we use when we get different blood tests done, for example, it's synthesized by the liver, your liver is managing so much, so big shout-out and love to the liver. Again, the things that can damage our liver, alcohol overload, carbohydrate bombardment, also your liver's responsible for drug metabolism, for medication metabolism, so having a hodge-podge excess of medications and not really having sovereignty in that, and folks are just getting this multitude of pharmaceutical drugs thrown at them, without really analyzing what is the underlying cause here, if I'm experiencing high blood pressure, for example, am I deficient in the statin? Am I deficient in lisinopril? If I have abnormal blood sugar, am I deficient in metformin, is that what my body was needing?

What is the underlying mechanism causing the symptom? We have to address that or we're just going to be treating that symptom and masking it. Your liver is going to take again, the biggest free open-stance crotch kick for managing and dealing with all the medications that people are taking. Now, it's not just medications, it's also understanding, more than ever right now, we've got to be more adamant about where we're sourcing our nutrition from, where we're sourcing our supplements from because it's a largely unregulated industry, so we're going to make sure that the things that we're taking are organic, they're not containing these binders and fillers and all these additive ingredients and this crazy stuff because your liver is responsible for supplementing metabolism as well. And lastly here, toxicants, so environmental toxicants, your liver is responsible for metabolizing or breaking that stuff down, it's saving our behind that way too, according to researchers at the University of Louisville, more than 300 environmental chemicals, mostly pesticides have been linked to fatty liver disease, right?

Another study and this is published in scientific reports, found a direct correlation between pesticide consumption, inflammation, and gut damage. Eating organic is not a joke, it's not just a trendy thing to do. That's what's normal, organic... We shouldn't even have the term, it should just be, "Oh, this is normal, not having pesticides, rodenticides, herbicides, all these newly invented synthetic chemicals coming along with our food, that's just normal food." But there's a stigma that we have now with this term, with this label, so it's not a trendy thing to do, it's what's normal, and it's one of the major ways that we can protect our liver, our brain, and also the third area here, and our final area and addressing systemic inflammation, what is regulating inflammation in our body, but also what's hardest hit by inflammation, which is gut inflammation. When it comes to inflammation, your microbiome/gut is really on the front lines. Research published in the Journal of Translational Immunology affirms that over 70% of your entire immune system is located in your gut, right?

So the immune system is what's getting called into action if we're talking about inflammation, it's that distress call from various cells and tissues in our body to get the team there, get the immune system there with 70% of it, of that immunity system being located in the gut. Now with this high proportion of our immune system being located in our gut, this is not an accident. It's by design. It just makes sense if you think about it from just a very rational perspective, what you're taking from the external environment and putting in your body is one of the most amazing but also potentially dangerous things that we could ever do, right? So our ancestors had to figure this stuff out along the way, some people ate some poisonous berries and they were taken out, but that immune system has to be their front lines to help the damage and it can also be coming along with dangerous bacteria, fungi, and different pathogens as well, that the gut has to be your front line to take this nefarious stuff out that might be coming along with our food.

But our ancestors figured a lot out for us, and now today, you got to understand that all these systems are still very alive and well, and this is why so much of our immune system is located here and what we eat inherently affects our immune system, and also, since your immune system is predicated on your body's inflammatory response, what you eat can inherently trigger inflammation and too much inflammation can damage your gut and the entire balance of your microbiome. Another way that inflammation can damage our microbiome overall and your metabolism as well, is by causing increased intestinal permeability, this is one of the direct things that we know is taking place when there's too much inflammation taking place in the gut through the foods that we're consuming, toxicants like pesticides is creating increased intestinal permeability. Recent data published in the peer review journal, Cellular and Molecular Life Sciences, reported that the tight junctions of the gut act as a selectively permeable barrier that allows in specific nutrients while also limiting the absorption of pathogens, toxins, and larger food molecules.

The study goes on to say that disruption to this protective barrier from the immune system dysfunction and inflammation can act as a trigger for the development of intestinal and keyword systemic diseases as well. So, damage, inflammation to the microbiome, to the gut lining can create systemic diseases, autoimmune-related diseases, for example, this is one of the major things that we see, especially when you understand that this protective barrier is there to make sure that larger molecules of food and other toxins don't make their way into our circulation, where the immune system will jump on it, even if something does make its way into the body through this increased intestinal permeability from inflammation. And what can take places the immune system will target, knock that thing out because we'll just say certain food molecules, larger food molecules making their way into our circulation that shouldn't be there has as a certain amino acid sequence, and we'll just say it's BBAA, alright BBAA. So your immune system goes and attacks that BBAA, but it also takes note, so our immune system is hyper-intelligent, always take a note like this problematic thing got in here and shouldn't be

here, this BBAA sequence might be trouble. Let's tag it, and let's keep an eye out for anything else that looks like it.

And this is where we get into the situation of this phenomenon called molecular mimicry, because if that amino acid sequence might also be a part of the sequence of your thyroid tissue or of your joints in your knees, for example, stirring about and triggering the action of an auto-immune thyroid issue like Hashimoto's or rheumatoid arthritis. Molecular mimicry is a major player in this in so many different... Really, really well-done studies now are affirming that this is taking place because for a while it was just like, this might be taking place where people really in the know could see this from a mile away that this is taking place because of the... This is the triggering event, this inflammation in the gut, so we want to be very... So we want to be very empowered and intelligent about what we're putting into our gut, into that environment to keep everything nice and cozy and not setting off a fire in there necessarily. And so how do we do this? One of the ways is supporting our overall microbiome health by providing our gut bacteria with the prebiotics that they need to create something called short-chain fatty acids or SCFAs, and SCFAs are literally made by our friendly bacteria, we can get some from food, but primarily they're made from friendly bacteria in our microbiome and it's getting produced in us for us.

And eating probiotic plant fibers from foods like asparagus, apples, leeks, and onions, have been found to produce substantial gut protection and demonstrate significant anti-inflammatory properties. One SCFA in particular called butyrate is proven to help reduce inflammation and provide energy for gut cells in the large intestine. So feeding our microbiome, the good stuff, right? So that's one thing, helping and support by providing prebiotics so that our probiotics and friendly flora can create postbiotics in us, for us, like these SCFAs. Also, another big key here is just simply increasing the diversity of foods that we're eating to provide a variety of different food compounds for the variety, the vast variety and diversity that we should have within the different colonies of our microbes, they need to have their preferred food or they're just not going to stick around. Also, last piece here, in supporting our microbiome and reducing inflammation, a study published in the journal, Nature Reviews, Immunology states that autophagy is a potent anti-inflammatory process that modulates immune responses. Autophagy, as they note, affects the secretion of inflammatory and antimicrobial mediators. Alright, so this process of autophagy, and we just talked about this recently with New York Times best-selling author, Naomi Whittel, so definitely check out that episode, we'll put that for you in the show notes.

But here's the key; how do we support this process to reduce inflammation through autophagy? Researchers from the Department of Immunology and Microbial Science at The Scripps Research Institute found that intermittent fasting has a profound effect on autophagy throughout our entire body, including our brain, our liver, and our gut. This cellular cleansing

triggered by intermittent fasting accelerates the removal of metabolic waste products, enabling your cells, tissues, and organs to work more efficiently. Alright, so supporting healthy autophagy is another way that we can reduce inflammation and help to heal our gut, our liver, and our brain. These regulatory forces for inflammation that's targeted also by rampant inflammation today, like never before. But again, the key here is, and this was through intermittent fasting, is one of the beneficial ways there, and I talk about that more, but a certain form of it that has more clinically proven data on it, smart intermittent fasting that I talk about in my most recent book, *Eat Smarter*, and right now, this is a big re-launch week for *Eat Smarter*. We've got a new campaign going with Target stores across the United States.

So really, really special and really grateful for this because this is something that our world really needs more than ever right now. We're really in a state where our health issues have been rapidly increasing just exponentially. This is truly something that our world needs more than ever right now, and so little attention is being paid to these underlying issues by our so-called "health officials." Our system is not really built on health, it is a sick care system, it is a management of symptoms. We've seen rates right nowhere in the United States, we've got about 242 million of our citizens are either overweight or obese. 60% of our citizens right now have some degree of heart disease already. We've got 130 million of our citizens are diabetic or pre-diabetic right now, we're a ticking time bomb. And enough is enough. About 70% of our citizens are already on pharmaceutical medications, but things are not getting better, in fact, they're getting worse. Right now at the generation that we're existing in is the first generation in recent recorded human history that is not going to outlive their predecessors, the generation before. Right now for the first time, our lifespan has gone down instead of going up, and with all of our advancements with where we are right now with our ability to communicate, to get educated, this should not be the case.

That's why mediums like this are so important. That's why books like this are so important, so timely, and to see it do what it did when it came out; it became the number one new release of all books in the United States, fiction and non-fiction when it came out, but also there was a parallel little challenge because the book sold out within about five days, which is not good, that's not good. It sounds great to the outer ear like, "Wow, it's amazing, the books sold out," but it's not like a concert venue where there's... It's sold out because of capacity, we want as many people to get this information as possible, and so... But everybody's pointing because during this time is also the age of COVID, there's printing delays and shipping delays and all these different issues, so they were out of stock for several weeks. And so I even had to pull back and in talking about the book in teaching because even when they came back in stock, they were immediately sold out again, literally within a couple of days, but now we've had the opportunity to really make sure that all the different outlets have copies of *Eat Smarter* from Amazon to Barnes and Noble, to again, our new campaign with Target Stores, and we want to

absolutely flood the airwaves, we absolutely want to demand that this is the information that we want by making sure that we pick up a copy of Eat Smarter today.

So, whether or not you've got a copy, this is a great opportunity to get a copy for a friend or a family member today to support the re-launch of Eat Smarter to support the health of our family and our friends and our community, because this is the time, where right now we're writing the future of our society, we're really writing the future of our civilization as humanity, are we going to continue on this trend towards abnormality? Towards disease and destruction? Or are we going to write a new story where health is the norm, where right now it's the exception? Because again, with those numbers that I shared, these should be shocking to us, we can flip these things, I truly believe it. And it's not just about our physical health, this is affecting our mental health and how we relate to each other as well. Our cognitive ability and we address all of those different things in Eat Smarter with the latest cutting edge information on how our nutrition not just affects our metabolism and our body composition, but how does our nutrition affect our cognitive ability, our memory?

What are the foods that we can eat to improve our working memory and improve our attention span, and improve our resilience under stress? What are the foods that affect and can help to support my emotional fitness and how I'm able to relate with other people? And what are the nutrients that can affect my sleep quality and my sleep efficiency? What are those foods and nutrients that are clinically proven to do so? So much packed into it. So grab yourself a copy today or get a copy for somebody that you care about. Check out the audiobook as well, and I appreciate you so much, this is again, such an important time. We're writing our society's future, and I don't take that lightly, but it's really going to take all of us working together under a common goal, and I truly appreciate you so much for tuning into this episode. If you've got a lot of value out of this, please share it out with your friends and family. This is one of the biggest issues of our time. And now that we know that inflammation isn't just some lower-tier thing, but it's a major causative factor in plethora of different health issues, it's something for us to target to address and to improve our health overall to reduce inflammation, and by reducing inflammation, we're also going to be improving our health overall, it works both ways.

So I appreciate you so much for tuning in to the show today, we're just getting warmed up, we've got so much more to come. So many amazing guests and powerhouse masterclasses coming your way very soon. So make sure to stay tuned. Take care and an amazing day. I'll talk with you soon. And for more after the show, make sure to head over to [themodelhealthshow.com](http://themodelhealthshow.com), that's where you can find all of the show notes, you could find transcriptions, videos for each episode, and if you 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.