

# **THE MODEL HEALTH SHOW**

**EPISODE 747**

## **The Gut Connection to Allergies, Asthma, Obesity & More**

**With Guest Dr. Emeran Mayer**

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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. How does our gut health impact things like weight gain or weight loss? How does the health of our gut and our microbiome impact our immune system and our resilience against things like colds and flus and also overall chronic diseases? We're seeing multiple epidemics of chronic diseases right now, and it has a lot to do with the health of our gut, and that's what we're talking about today. Now in particular, looking at one of the biggest struggles in our culture today, which is an inability or a struggle to lose weight. How does our gut health play into this? Well, researchers at Yale University School of Medicine have found that our vagus nerve, which communicates information between our gut and our brain, is playing a big role in this.

**SHAWN STEVENSON:** This is an information superhighway that according to these researchers, our brain and our gut are sending information back and forth about the volume and the types of foods that we have available in our system. And our brain can literally tell our gut, depending on its perception, depending on its perception, this is the key. It can tell our gut to either increase or decrease its absorption of calories from the food that we're eating. It can tell our gut to increase or decrease the absorption of certain nutrients. This goes far beyond this calories in, calories out paradigm, calories absolutely do matter. It's a unit of measure that we have uncovered that we can agree upon, but the story is so much bigger. There are multiple epi caloric controllers in determining how our body is utilizing the calories that it's exposed to, and it's gonna be different from person to person.

**SHAWN STEVENSON:** And according to these researchers, what's happening in our gut and what's happening in our brain is a major controller of all of this. Now, let's dive in and get up in them guts right now. Let's talk a little bit about that. What's happening in the gut that can be influencing this process? Well, a recent study published in the International Journal of Obesity revealed that a higher diversity of gut bacteria is directly correlated with less weight gain and improved energy metabolism, independent of calorie intake and other factors, independent of calorie intake. Our diversity of microbes is playing a huge role in how our bodies are processing or associating with calories, determining whether or not we're gaining weight. Now, again, this is yet another example of how two people can consume the same

amount of calories, but one gains weight while the other person does not. Our microbiome is a huge player in all of this, our metabolism, our brain health, and much more.

**SHAWN STEVENSON:** And on this episode, we are going to be hearing from one of the most published researchers in the world on all things gut health, the microbiome and more. He is the author of over 400 peer-reviewed studies and not to mention several bestselling books on this subject matter. He is a true leading authority on this subject matter. And also if you're wondering how is my gut impacting my brain and in particular my mood, like what are some of the underlying factors there? Well, the human gut itself is a mass of neural tissue, things that we would often associate with the brain and the nervous system. Our gut is actually filled with 30 different types of neurotransmitters, just like the brain and more, by the way, 30 that we've identified because of this massive amount of brain-like tissue that's found in the gut, it's rightfully earned the name as the second brain.

**SHAWN STEVENSON:** So the gut is often referred to as the second brain, technically known as the enteric nervous system. This second brain also consists of around 100 million neurons more than what's found in our spinal cord or even the peripheral nervous system. Truly, there's a lot of thinking happening in our gut and this connection between our gut, our microbiome, our brain and nervous system is controlling so much about our lives and our reality. But if we don't get this education, if we're not aware of this, and also what are the inputs, what's happening when we're putting subpar information in the form of low quality ultra processed foods into our gut versus real nutrient dense foods, what are those outcomes gonna look like? Today, we're gonna talk about that in so much more, and without further ado, let's get to our special guest and topic of the day.

**SHAWN STEVENSON:** Dr. Emeran Mayer is a renowned gastroenterologist and neuroscientist, and he's the author of over 400 peer-reviewed studies. Over the past 40 years, his research and published work has offered groundbreaking evidence with the critical role of the bidirectional interaction between the brain and the gut, and more recently on the role of the gut microbiome in these interactions. In addition to his scientific work being published in top peer-reviewed journals, he's also the author of multiple bestselling books, including *The Mind Gut Connection*, and *The Gut Immune Connection*. Check out this amazing conversation with

**DR. EMERAN MAYER:** Over 425 peer-reviewed published papers coming from this guy here, my special guest, Dr. Emeran Mayer. Welcome back to the Model Health Show.

**DR. EMERAN MAYER:** Nice to be back, Shawn.

**SHAWN STEVENSON:** Alright. Right now about three out of four of our citizens here in the United States are either overweight or obese. This is a huge issue and a lot of people are wanting to do something about it, but oftentimes we're kind of lacking education on how to go about it in an efficacious way. Your work has really brought forward huge revelations about the impact that our gut has on our metabolic health and the outcomes of things, obesity. So how does that actually work? How can what's going on in our gut be impacting things like obesity?

**DR. EMERAN MAYER:** Well, first of all, our gut is the entry point of everything that we eat, obviously. And we have a very efficient part of the gut. The first part, the small intestine, that's where most of the absorption and enzymatic breakdown happens. But then we have another part of our gut, which is the home of a hundred trillion microbes. And they have their own taste preferences, and they live from everything that's left over from what we eat, and it's not absorbed in the small intestine. So most of the research, even when I started my career, everything was focused on these mechanisms in the small intestine, the absorption, transport of molecules, the enzymes, pancreatic enzymes that break down fat components, bile acids that create molecules that can be absorbed and easier. So everything happened, all the research happened there. And in terms of the other part of the gut, it was just always thought, yeah, fiber, the waste material goes down there. And if you have a high fiber diet, it's good for you because the emptying of the large intestine is more efficient and that's healthy. This has changed completely now, and this has a lot to do with the obesity epidemic. Our food supply has changed so dramatically in the last 75 years.

**DR. EMERAN MAYER:** I would say it's been fairly stable over, could we even say thousands of years with certain revolutions when humans developed a method of cooking of basically processing food and fermentation. So these were always like pumps in this development. But pretty much the food supply, mainly from unprocessed, food from, to a large degree

plant-based, many of the traditional food cultures around the world, no matter if it's Asia or Native Americans, or the Mediterranean basin, it always has been a largely plant predominant food intake. So all this has changed in the last 75 years. So if you go back 75 years, a big portion of what we ate, the plant-based foods, non-processed, not, certainly not ultra processed, was not absorbed in the small intestine, did not translate into direct access to calories, but went down to the microbes, the microbes processed it. And not only processed this into their own food because they live off these, for us indigestible food components, but also into small molecules like the short chain fatty acids that are anti-inflammatory. So our whole system has changed now.

**DR. EMERAN MAYER:** I would say for some people, probably 80% of what they eat is all of sort rapidly in the small intestine. And that's on top of that is sugar, fat, and all the ultra processed food components that don't require a breakdown by our microbial system. So 80% of that is absorbed. So giving a much greater percentage of direct calories from the food that we ingest. And a very small part goes down to the microbes. We're starving the microbes essentially. And that also involves a decreased production of these anti-inflammatory molecules. And one of these is important, so it's always, it's like a yin and yang in our body. There's inflammatory influences and anti-inflammatory influences. What we have now is a dominance of the inflammatory components of our food. And that leads to a lot of changes in receptors, both in the gut, but also in our brain. Like in the hypothalamus, it regulates appetite and essentially is one of the main drivers for food intake. So we have knocked out the system in or compromised the system in the brain that would make us feel satiated after a meal.

**DR. EMERAN MAYER:** And that's to a large degree through these inflammatory influences. And a downregulation also of these receptors like the GLP-1 receptor in the hypothalamus. If they're always overstimulated by the signal that comes from the gut in these endocrine cells in the gut, they down regulate as well. So if a downregulation of a lot of receptors on the vagus nerve, on, in the hypothalamus, in the gut, so the system of satiety creation is no longer as effective.

**SHAWN STEVENSON:** Yeah. And it's largely due to the change in our food. That's the thing.

**DR. EMERAN MAYER:** Largely change. Yeah. And, so I mean, I was like this notion. So the easiest way to do something for your own health and counteract obesity is really to have a food intake or have a diet that's optimized for your gut microbiome, because that will automatically solve all the other problems. It will solve this rapid absorption, the small intestine of calor, of empty calories, and it will also create a source of quality endogenous aspirin or the endogenous anti... So we have a factor of anti-inflammatory molecules that we compromise with our diet.

**SHAWN STEVENSON:** Yeah. And we're seeing, for example, those, our fat cells themselves just getting excessively filled with these contents start sending out effectively like a false distress signal to our immune system as if those cells are infected. And it's just like an inflammation vicious circle that we get caught up in. And you mentioned this, and I'm so grateful you brought this up. A lot of this regulation between our metabolism and our brain is happening in a hypothalamus. And this is kind of like an internal thermostat too for our metabolic rate in association with our thyroid, pituitary, all that stuff. But this is like a master gland for a lot of these processes. And researchers at the Albert Einstein College of Medicine published a really fascinating study looking at how inflammation in the hypothalamus, hypothalamic inflammation or neuroinflammation, was creating downstream excessive belly fat and insulin resistance.

**SHAWN STEVENSON:** And then that excessive fat and insulin resistance was creating more inflammation in the brain. And you just see again, this vicious circle and to break the circle, what you're sharing is like food is a top tier thing because these inputs are influencing our microbiome, the integrity of our cells. Can you talk a little bit about specifically the microbes, how that interplay happens? Because there are even bacteria that are more associated with obesity and in similar resistance that can kind of like start to proliferate in a way, I guess with all these ultra processed foods. Can we call them "fat bacteria?"

**DR. EMERAN MAYER:** Well, I would say at the moment there's a lot of... So in science you make a big distinction between associations or correlations and causality. So the fact that people that are obese have metabolic syndrome have a different microbial composition of

the microbial ecosystem doesn't automatically mean there's a causal relationship. So for the lay public, this doesn't seem to be a big difference, but in science right now, there's a big push. We don't have enough human studies that proof causality.

**SHAWN STEVENSON:** Right. We don't know what comes first.

**DR. EMERAN MAYER:** Yeah, we have no... We don't know what comes first.

**SHAWN STEVENSON:** Bacteria change or obesity.

**DR. EMERAN MAYER:** But certainly you can imagine if you are on a diet that is deficient in these molecules, in these components that the microbes thrive on the number of, or the prevalence of these microbes will go down. So you have an impoverished diversity and richness of the gut microbiome. It will also affect the molecules that they produce. So there's been a big shift recently in, say in the last five years from getting away from the individual microbes that we put so much attention to, to what they actually produce. So we've gone from quantifying the relative prevalence and number of certain microbes to the amount of gene expression in these microbes that produce chemicals or so-called metabolites that then get into the bloodstream and affect many organs in our body, all the way up to the brain.

**DR. EMERAN MAYER:** But this idea, so there's a lot of talk about, so we have an impoverished gut microbiome. We have a decrease in the short chain fatty acid producers. It's kind of a simplistic concept we have right now, but I think it's the one concept that we can say most people agree on, that the good guys in our gut are the short chain fatty acid producers. And, the several short-chain fatty acids, Butyrate is the one that has gotten the most attention because it has a lot of beneficial effects from promoting the integrity of gut cells, of having anti-inflammatory effects directly on the immune cells, to having effects on receptors in the brain. And these short-term fatty acids are everywhere. They're not just in the gut where they have obviously the highest concentration, but they travel in our systemic circulation and reach all the organs.

**DR. EMERAN MAYER:** So if you look for example, what happens in the brain in people with

poor metabolic health, so there's always influences from the gut microbes that are positive and that are negative. The negative ones, a lot of them have to do with actually the microbes themselves and their cell membrane. So in that cell membrane, there are molecules like the lipopolysaccharides those are sort of the classic inflammatory molecules. And so if you have a leaky gut, shouldn't really use that term as a scientist. But that's an increased permeability of the gut barrier and an increased permeability of the blood brain barrier. So there's a series of barriers that we have between our gut and the brain. So when these are compromised fragments of microbes that have lived in the intestine, first got into our gut-based and out gut based immune system, did that damage there and then make it through the systemic circulation, they trigger engagement of cytokines from cells in our brain.

**DR. EMERAN MAYER:** Not the nerve cells, but the glial cells. We have 40% of our brain is composed of these non nerve cells, non-neuronal cells. So that's the one side, the bad side from the microbes. And that effect is the stronger, the greater the permeability of the gut barriers and the blood brain barriers, which comes also along with the unhealthy diet. But then you have these anti-flu, the counter forces, which are the short-chain fatty acids and anti-inflammatory cytokines, like IL-8 for example. And it's the balance between these two that really determines and it's not just in the brain, this balance. I mean, this happens in the immune system, happens in the liver, and the liver's a particular target of these metabolic modulating influences. So in some ways you could explain this in a very easy way. Unhealthy diet leads to a compromised gut microbial ecosystem. Loss of or not total loss, but a decrease of the butyrate producers that normally thrive on complex carbohydrates and fiber and polyphenols. So you have a decrease of these that leads to a decreased production of mucus in the gut. So there's another bacteria, Akkermansia eosinophilia, very interesting, microbe that can actually, that lives on the mucus in the gut. So initially it seems paradoxical that they would be a good guy.

**DR. EMERAN MAYER:** So if you go on a fast and your microbes don't get fiber anymore, these Akkermansia microbes then feed on the mucus in our gut. So they decrease the layer, but at the same time, they stimulate the production of new mucus from specialized cells in the colon. So what you get is a turnover, a faster turnover, which leads to an improved mucus layer and an improved barrier. So if a decrease of these Akkermansia diet induced, you'll



compromise your mucus layer, increased permeability. And then as you said from there on the poor diet changed, gut microbial ecosystem, decreased butyrate producers, increased permeability and engagement of the immune system. So in some ways, I think we've learned a lot about this. And I always say that microbiome science is moving at an exponential pace. What we know today will probably be a fraction of what we know in 10 years?

**SHAWN STEVENSON:** Right.

**DR. EMERAN MAYER:** But I think there's certain trends and general concepts that are pretty supported by pretty good science and data.

**SHAWN STEVENSON:** Yeah.

**DR. EMERAN MAYER:** Not just in animals, even though most of the data comes from Animals but it's also supported by Human Studies.

**SHAWN STEVENSON:** Yeah. We are seeing, like with Akkermansia for example, correlation with longevity as well. We're seeing all these really interesting things popping up, but having some higher quality studies being done to see the impact on humans, a lot of stuff is happening right now.

**DR. EMERAN MAYER:** What you just said is that a microbe like Akkermansia, this really stands out because it's been so well characterized in terms of its role in mucus, in the quality of mucus production and turnover. And when you think about it, it's kind of amazing that that would have a relationship to human longevity. That one player, where we have more than a thousand species. It's just one of a thousand. And I'm convinced there's lots of others that either...

**SHAWN STEVENSON:** Of course.

**DR. EMERAN MAYER:** Interact with Akkermansia. 'Cause these microbes don't act in isolation there're always communities that, or little ecosystems that feed on each other. But right now

we can say, yeah, it's best studied for Akkermansia and it's amazing that you have a microbe that you can measure and as a biomarker kind of for gut health.

**SHAWN STEVENSON:** Yeah. Now, as you've shared, this is a primary input for our health, is the food that we're eating. It's a huge input, a lot of cellular data, a lot of processes are being run, the building of our different cells and tissues. Food is very important in this whole equation. As I'm looking at you, I'm seeing the food that you've eaten and vice versa. And in your new cookbook, this wonderful new cookbook you share, and I'm just gonna to read a direct quote. "Strangely, my entire medical training, including the specialty training in gastroenterology, didn't expose me to more than a few hours of education in food, nutrition and diet."

**SHAWN STEVENSON:** And your specialty is treating the organs that deal with the processing of food and only receiving a few hours of education. And since then, you've been on a mission just absorbing so much data, sharing with your colleagues, sharing with the public at large that this part of the equation has been missing. So, could you talk a little bit about that? Because obviously a lot of folks don't have all of the years, the decades that you've put into this. And by the way, you've been studying and talking about the microbiome long before it became en vogue. And you are truly a pioneer legend in this space. But even in medicine today, this isn't... Food isn't being talked about. It is not an important part of the education when again, whether it's cardiology, the heart is made from food that the patient's eating, gastroenterology, neuroscience, whatever the case might be food is so important, but why is it not a part of our training?

**DR. EMERAN MAYER:** Yes, a really good point, Shawn. Yeah, I wanna add sort of a little bit of a personal anecdote to this. So I grew up in this small town in southern Germany, in the Alps and when I look back today, it was actually pretty healthy, so a lot of very healthy food components that we didn't really pay attention. We liked the food, we didn't pay attention, even though my parents would always say, this is healthy and this is healthy. And that ranges from a regular intake of fermented foods, from sauerkraut to many other fermented food components that were a natural part of the diet there.

**DR. EMERAN MAYER:** It was a small amount of meat at the time, it was a long time ago. But, and it has changed, the food was unprocessed, my mother would buy it in the farmer's market exclusively, and would not go to any other place. But all this was not driven by the, in the intense focus that we see right now in the US about health and gut health. This was a natural part of the lifestyle. I never thought about it, it didn't affect my decision to go to medical school. And, but then being in medicine, it was a really and it still continues to be an amazing recognition of how little of that food knowledge is actually getting into the healthcare system.

**SHAWN STEVENSON:** But why, why is that?

**DR. EMERAN MAYER:** Yeah, so this, just to give you a couple of examples. So in inflammatory bowel disease the entire focus and big progress has been made scientifically in developing these biologics, these anti-inflammatory molecules. But diet was never a part of any therapeutic recommendations. If you imagine this, you have your entire gut on fire and your physician would not talk about the diet and if anything, there was a time when I was in early part of my career where it was recommended a diet that is very low in fiber because the fiber could irritate the gut, the opposite of what's happening today. Now there are attempts now.

**DR. EMERAN MAYER:** So, I just recently, the Crohn's & Colitis Foundation, a wonderful organization that sort of translates or takes questions from the lay public, from the patients and incentivizes physicians or scientists to study those questions. So only about, I think it was five years ago, they identified diet as an important topic that a patient would bring up if you imagine this. So up to now, this was not an important topic for any IBD expert...

**DR. EMERAN MAYER:** In irritable bowel syndrome. It's been sort of, kind of the opposite, that fat diets have come and gone over the, during my career, seen so many from high fiber to low fiber to the low FODMAP, to the, gluten-free diet that has, this was really not a scientific endeavor. It was more somebody comes up with something and then it's being promoted. So there is a lot of confusion in that field. In, IBS. And there's also progress, if you look at our division at UCLA, has now five dieticians that are part of a wellness center, GI wellness center at UCLA. So there's some universities that are reversing this trend. The physicians themselves

and the employees of medical centers I don't think are really yet affected by this because, just has witnessed by a recent thanksgiving luncheon in our division with 50 of our employees that, yeah, I mean the food that was served had absolutely zero input from any health standard. It was a very corporate diet Coke and Coke, as the drinks and as if nothing had happened, this is in the middle of our research center, So it's...

**SHAWN STEVENSON:** You said they had Wonder Bread too.

**DR. EMERAN MAYER:** Yeah, yeah, yeah. The Wonder Bread, which I hadn't seen for a long time, by the way. [chuckle] So I think there's good and bad sides. There's definitely progress now slowly coming, but if you imagine so many of the nurses also, that's another example. Probably the majority of the nurses in medical centers certainly true about UCLA are overweight and obese, which is a shame. I mean, if, so imagine you, go there, the nurse gives you material about what you should do and at the exit visit and that individual is, obese. I mean, is that something that instills trust in you, that you need to do something that, so it's, I think there's a responsibility. I think that healthcare systems have to rapidly adapt to what's going on, in our world now on the internet and everywhere, but institutions are always slower than, social media for example, and it's in the implementation. If you look at this historically, why was this never incorporated? I mean, coming from a German university, so diet, healthy diet in Germany at the, in the 19th century, there were a lot of, big names homeopathy and, all these different diets. There were books written about that, but it never made it into the medical system. It sort of stayed outside as sort of fringe knowledge that was propagated.

**SHAWN STEVENSON:** In lieu of pharmacology.

**DR. EMERAN MAYER:** Yeah, yeah. In lieu of pharmacology. So clearly pharmacology has done a much, much better job in convincing physicians and administrators that, chemically based. I mean, just in agriculture, chemically based agriculture and chemically based treatments are, just, that's what is modern and that's what people are willing to take and willing to pay for.

**SHAWN STEVENSON:** Yeah. And I'm a big fan of looking at results. If we were doing well with

that model, I'd be all for it. But there's a break right now where we're seeing multiple epidemics of chronic diseases and the treatment of symptoms. Most of these conditions, we're not seeing anything going into remission largely. And there's a lot of unnecessary suffering and a big part of this. And, you've been somebody who's sharing this information like you are decades in this field and publishing a new cookbook as a physician and giving this as a solution or an important part of the solution, which is giving yourselves real food nutrition, giving these inputs so that you can shift the state of your health from the ground up rather than trying to treat a symptom, which has its place. Obviously you've been doing that for decades, helping people when they're already unwell, but how about we focus on getting to a place where we don't have a lot of people who are unwell?

**SHAWN STEVENSON:** We've got a quick break coming up. We'll be right back. Our microbiome plays a huge role in the health of our immune system, brain health, metabolic health, and so much more. And there's one beverage that has been proven to support the health of our microbiome. A recent study published in the peer review journal, Nature Communications uncovered that a unique compound called Theabrownin found in traditional fermented tea called Pu-erh, has some remarkable effects on our microbiome. The researchers found that Theabrownin can positively alter our gut microbiota and directly lead to a reduction in something called lipogenesis or the creation of new fat. Another study published in the Journal of Agriculture and Food Chemistry found that Pu-erh may be able to reverse gut dysbiosis by dramatically reducing ratios of potentially harmful bacteria and increasing ratios of beneficial bacteria. What's so remarkable about Pu-erh is its concentration of polyphenols that are incredibly important for healthy gut flora.

**SHAWN STEVENSON:** The only Pu-erh that I drink is a fermented Pu-erh that's wild harvested, making it even more concentrated in polyphenols, and it's also triple toxin screened for one of the highest levels of purity. Not many folks realize that a lot of conventional teas, even organic teas, contained heavy metals and toxic molds. This is the only company that is going above and beyond to make sure that this is the highest quality tea available. And I'm talking about the folks at PIQUE LIFE. Go to [Piquelife.com/model](https://Piquelife.com/model). That's P-I-Q-U-E L-I-F-E.com/model and use the code model at checkout, and you're going to receive up to 15% off free US shipping. And you can even get a free sample pack of 12 teas along with

their wonderful Pu-erh bundles. You're gonna get access to over 20 delicious award-winning flavors, and of course, their amazing Pu-erh and Pu-erh blends. Go to [piquelife.com/model](http://piquelife.com/model). Again, that's [P-I-Q-U-E-L-I-F-E.com/model](http://P-I-Q-U-E-L-I-F-E.com/model). Use the code model at checkout for up to 15% off, plus many other bonuses. And now back to the show.

[music]

**SHAWN STEVENSON:** And I wanna ask you about this. One of the most alarming things is that we're seeing these epidemics of chronic diseases happening in younger and younger populations as well. I just saw some stats earlier today looking at the increased incidences of asthma in our society and the researchers. This was published by the American Lung Association, and from 1999 to 2018, the prevalence of asthma went up 45%. 45%. It was 43% to be exact, but 45% in basically 20 years. That is crazy. And most people don't realize that allergy, asthma, these types of conditions have a lot to do with gut health. Can you talk about that connection?

**DR. EMERAN MAYER:** Yeah. I mean, these trends, that we now see, you mentioned for asthma, but these trends happen really in many of these chronic diseases. Colon cancer is a good example. Where the screening, the age recommended colon cancer screening by colonoscopy has moved downwards into the 40s. Now I'm convinced it will move down even further. Same with diabetes, the same with metabolic syndrome. The age keeps patients get younger and younger.

**DR. EMERAN MAYER:** So why would that be. So I think if you look at the... There's definitely multiple factors. I mean, nothing like this is explained by one factor. Even diet is probably one of the most important ones. But the lack of regular exercise, the sedentary lifestyle that most people spend, 80% of the day in a sitting position and not even walking, things that we ingest with the food, like the, all the chemicals and that are in the environment in the water.

**DR. EMERAN MAYER:** So there's multiple reasons, probably also the chronic stress, which affects, not just the brain, but through the brain, gut communication affects our gut health. The permeability and also the composition of the microbes. So there's many influences. Our

modern world is very, very different from the world where we had a symbiotic relationship with our gut microbes and exercise was the norm.

**DR. EMERAN MAYER:** 'Cause everybody, so I think the most plausible explanation for this, for diseases that occur in young age groups, is the diet that young children have. It actually starts with the diet of the mother, the pregnant mother, because the mother has a microbiome and these microbes, so many women when they get pregnant, are overweight or obese. I mean, if you look at this 40%, of the population that goes all the way down to, that includes also pregnant women.

**DR. EMERAN MAYER:** So during a pregnancy like this, this woman is in an inflammatory state, a low grade inflammatory state that crosses the placenta and affects brain development. And many physiological functions that are developing during that time already before birth. Then the breast milk, the breast milk is also influenced by the metabolic health of the mother. So the molecules that are in there, this human milk oligosaccharides, which are really targeted, specifically at the gut microbiome of the children, is probably compromised as well, in women that are metabolically not healthy when they're pregnant.

**DR. EMERAN MAYER:** And then, there are things like, delivery, methods of delivery that, we have some countries like Brazil, and I think Italy, 60% of women deliver by c-section and not vaginally. Vaginal delivery is the time where we first colonize our gut microbiome with the organisms of the mother, the vaginal ones.

**DR. EMERAN MAYER:** And, even though if you look a year later, most of the kids, so the difference between kids that were eventually born and c-section born are indistinguishable. But it's been a year of time where they were different. And that's the time where there was a lot of interactions going on with the immune system of the babies and the baby's gut, and the teaching of the immune system to differentiate between good and bad and foreign and belonging to you is, which is good for you, has been compromised. So that's where the period where that explains like the allergy, the increase in allergies and autoimmune diseases. So even though the initial alarm balance went, people got less excited, say, "oh, it's not such a big thing if after a year you have the same microbiome as somebody who's vaginally delivered."

**DR. EMERAN MAYER:** Well, it is a big thing because you missed out on a big, like the first, you could only say the first three years of school, you missed. And then it continues. I mean, the food that, after breastfeeding, the food that children get, the example of the mother, what's in the household, what's in the meals is obviously another big. So all of these, and then the antibiotics on top of that, which again, start in the delivery room. And in animal studies been shown, one of the main investigators here, Marty Blazer showed that even one dose of an antibiotic in a pregnant mouse affects the microbiome of the offspring.

**DR. EMERAN MAYER:** And we, statistics show that by the age of two, there's already forgot the exact number, several doses of antibiotics that the average child in the US is getting. And by the age of eight, it's 10 doses of antibiotics. So during the time where the learning goes on. So the microbes in the meantime are out of elementary school, during college, they're still being bombarded and interfered with in terms of their learning how to interact.

**DR. EMERAN MAYER:** With the Gut, with the immune, with the immune system particularly, that's also something that has not really, I think, entered the medical world, in OB-GYN, still a lot of defenders. It's good for the mother to get prophylactic antibiotics during delivery to prevent potentially serious infections. And I think also this technique that's been used to use a swab of the vagina and put it into the mouth of a newborn right at delivery that basically mimics this...

**SHAWN STEVENSON:** That was delivered by C-section.

**DR. EMERAN MAYER:** Yeah.

**SHAWN STEVENSON:** Yeah.

**DR. EMERAN MAYER:** So it's, the uptake of this knowledge has been very slow, even though I think, I mean also the use of antibiotics by family practitioners and pediatricians early on in life is, often it's not their fault because the desperate mothers kind of twist their arm. My child is so sick.



**SHAWN STEVENSON:** But still they have the power.

**DR. EMERAN MAYER:** Yeah, they have the power...

**SHAWN STEVENSON:** Of that prescription...

**DR. EMERAN MAYER:** They would... If they gave an informed advice why this is harmful for the rest of their life to these children.

**SHAWN STEVENSON:** But I feel that of course, you know this as well. A lot of these practitioners don't really know, of course they're not trying to do harm and looking at the temporary snapshot of this situation. And also, a lot of times, and I've experienced this where when I first met my wife, I was, I still had like these really bad seasonal allergies and I couldn't breathe in the evening. And she took me to the ER and they didn't run any panel on me to see if this was a viral infection or whatever the case might be. I got some antibiotics.

**DR. EMERAN MAYER:** Yeah, yeah, yeah.

**SHAWN STEVENSON:** And if it wasn't for a conversation on the way home, we stopped by to see her mother. My then girlfriend, now wife's mom, and she asked me, because she said "my daughter says that you're having trouble breathing." And I was like, "yeah, you know, the weather changed and you know, it's the seasons." And she said, "is the problem out there or is the problem in you?" And it really just like stopped me in my tracks, wait a minute, there's something going on within myself and making me hyper reactive.

**SHAWN STEVENSON:** And for me, it was a certain food category that was causing this kind of, pro-inflammatory, histamine sensitive reaction. And for me at the time, it was dairy, but it was the dairy from obviously not the best sources, all the things. And also the quantity that I was taking. Now I can have a tryst with dairy and not have any issue at all. But at the time when I pulled that out, literally, this is almost, this is 18 years ago, I haven't had a single, and I had chronic asthma growing up. No asthma symptoms, no allergies, none of that stuff, It was

gone.

**DR. EMERAN MAYER:** That's remarkable.

**SHAWN STEVENSON:** But that was, one piece. But as you said, it's usually not one thing. Right? That's a part of the puzzle for me. There's a big part of the puzzle, but also the environment, movement practices, sleep habits, different environmental exposures. My overall diet change, but this is what I want people, everybody should have access to this information. But we're getting this kind of cookie cutter one size fits all thing where, because of this, we should be upset about this almost 50% increase in incidents of asthma just in the last 20 years. Like, that's a problem. We're making these sacrifices because we're looking at, even as you just mentioned, pregnancy and the delivery process as emergency surgery. And intervening when you don't need to intervene.

**SHAWN STEVENSON:** And some of these statistics are crazy with the C-sections, of course you can get it scheduled now if you just want to. But also you see the times of days when the C-sections are happening at physician schedules and seeing, towards the end of the day, that kind of thing. When somebody is about to get off, you see this increase in the number that are getting done. We've gotta step back and look at this is gonna affect the whole life of the child. We need to be grateful we have that technology to do C-section safely. But if we're just leaning on that and now like having half or even a majority of C-sections happening in some different places, some demographics, like we've gotta get more education out there about that. And I want to ask you about this as well, because getting those inputs you just mentioned from the mother breast milk, childbirth, training for the immune system, for the microbes, but then the inputs later on, and I want to pass this over to you and ask you about this.

**SHAWN STEVENSON:** So this was published in JAMA in 2018, and they were tracking, funny enough, a very similar timeframe from 1999 to 2018, ultra processed food consumption by US children. In 1999 61% of our kids' diet was ultra processed food. in 2018, it was over 67%. It was 67.5% ultra processed food. So can you talk a little bit about the inputs for the kids in the form of these ultra processed foods, very likely having an impact on these high rates of

chronic diseases happening in young and younger populations?

**DR. EMERAN MAYER:** Yes. I mean, these ultra processed foods are certainly marketed aggressively. All the bars that are available and, it's from the breakfast cereals to the snacks. I recently, not sure if how many kids would be exposed to this, but on a flight to New York. So they hand out these pretzels, they give you a choice between pretzels or something sweet. And I looked at this bag or this pretzel, and once I'd had the nice pretzels on it, the other, the ingredients, the entire package was full of writing. What stuff was in there. I couldn't believe it.

**DR. EMERAN MAYER:** There's more that you could put so much into a tiny pretzel, so many ingredients and chemicals that nobody will ever know what they do. And I'm sure this is the case for a lot of other foods as well. It's from the food coloring to flavor molecules and kids obviously like this because these things are developed by experts on food preferences, taste preferences. They do tests on children. Which one do you like the most and which flavor? And so.

**DR. EMERAN MAYER:** Typically if you know of, but that's the simple story. Typically it's the addition of fat and salt that is something that people go to and sugar. I mean, these are the three things that make food most attractive. And these snacks as well. But that's just the tip of the iceberg. These three components. There's all these chemicals with names that you may have last seen in your chemistry class and why they pick those. And what they do is, I think, is very little known. But the exposure of that and this business of selling this... I've seen this a little bit. And I've heard these discussions being on the advisory board of a dairy company that also makes yogurts and, I mean, just the debates we had about the addition of sugar or non-sweetened, non-sugar sweeteners.

**DR. EMERAN MAYER:** The debate always comes to the same point. Well, if you take out the sugar and don't add these other non-nutritive sweeteners, people are not gonna buy it. They're gonna go to the competitor because that yogurt tastes better. So this is definitely something that the companies know. So they know it well. They would be willing to change it, but they can't afford to lose market share, based on that. And, yeah, I would say this is a trend

that also starts early in life. I mean, the programming of food preferences starts very early. If kids are exposed to fermented foods, for example, early on in life, they're most likely gonna like that too. As they are in countries like Korea and Japan.

**DR. EMERAN MAYER:** In the US that's generally not the case of, but this programming of food preferences early on in life has a big influence on what these kids are gonna consume for the next 15 years. And in general, they're all unhealthy components. As I said it's the sugar, it's the fat, it's the chemicals. It's definitely not the addition of fiber to it. Yeah, I would say it's, and I've seen this practically, as I said, in a company that has the best intentions to make healthy foods and it's their logo, and their mission, but it's been a struggle for them to really make a big case for sugar and sugar is one of those things that has played one of the an outsized role in this unhealthy diet that we're consuming.

**SHAWN STEVENSON:** Even with fiber, for example, though, a lot of these different terms that we're becoming aware of, they're used for health washing.

**DR. EMERAN MAYER:** Yeah.

**SHAWN STEVENSON:** I remember when I was trying to eat healthier and going from my Honey Nut Cheerios addiction to like, let me get an adult cereal, like a grownup cereal, and I would do these, Quaker Oatmeal Squares, and it was still so high in sugar, but it said it was high in fiber. So I thought that that was the better choice. And then of course, come to find out later, I was just like, I'd never really looked at the amount of sugar that I was consuming from that. And also a recent analysis done by the Environmental Working group, they looked at some of the most popular cereals on US store shelves, and they found that these oatmeal squares, which was my favorite cereal, were the most contaminated with glyphosate.

**DR. EMERAN MAYER:** Yeah.

**SHAWN STEVENSON:** Of any of these other cereals tested. Right? And can you talk a little bit about that as well? The influence of pesticides and herbicides and things like that on our microbiome. Glyphosate is getting a lot of news right now, and also it's noted by the WHO to

be a Group 2A carcinogen. So probable cancer causing agents in humans not confirmed. Not 100%, but it's another big question mark.

**DR. EMERAN MAYER:** Yeah, I mean, the glyphosate story is kind of amazing. 'Cause some of the most recent data and information in the news has been that the European Union has basically refused to issue a ban on the use of glyphosate. So farmers can continue based on lack of scientific evidence. So that's really a very sad part of that story. I mean, the whole glyphosate stories, when this was approved early on, they had human cell cultures and they exposed it to glyphosate. And they did not find any negative harmful effects on the short term, was not tested in humans.

**DR. EMERAN MAYER:** And based on that, they got FDA approval or FTC approval to use this extensively. In the meantime, we know, humans, we don't have the enzyme that breaks down glyphosate into the very harmful component. But all these studies were done before microbiome science came on the scene. So now we know that certain microbes can break down glyphosate into these harmful chemicals. And so our microbes in the gut, this is one of the rare examples where they can actually, their ability to metabolize chemicals, has a negative effect on us. It doesn't harm them, but it has a negative effect on us.

**DR. EMERAN MAYER:** So, just based on that, I think what the FTC or the FDA would have to do is to put it on hold and demand studies in humans with the gut microbiome to show that these early approvals of its use and in extensive amounts, it's just not justified. There's also been a phenomenon that the weeds that become, which are the targets of glyphosate to kill plants that farmers don't want to contaminate their fields. And they've become partially resistant. So these weeds have developed genes that they're now resistant to the normal amounts of glyphosate. So the doses had to be increased that are sprayed on them, which means that the likelihood that even after washing that there's still glyphosate on these plants has increased significantly.

**SHAWN STEVENSON:** Was even used as a desiccant though. To dry out these different plants to help process them faster. It's used in ways that it wasn't initially proposed to be used for like the concentration of the exposure is very different from what when we're looking at

these studies earlier on to get it onto the market.

**DR. EMERAN MAYER:** Absolutely.

**SHAWN STEVENSON:** And first of all wasn't done with human models just like but then it's used for human food It's just like this very sketchy area now I'm glad you brought this up to with the FDA and having a certain amount of evidence and the thing is these companies are very powerful Monsanto is incredibly powerful and even things that are still caught up in red tape. Unfortunately like chlorpyrifos another pesticide has been shown in multiple peer-reviewed studies to lead to birth defects and Spontaneous, loss of babies and brain damage and all this different stuff. But it's still on the market and there's litigation and things like that but the thing is if you don't keep your finger on the button this whole time like we got to keep on going after this thing the next thing comes up and we get distracted, so it's just like there's all these newly invented things in our food supply and you and I both agree a lot of these things are trying to do good initially like feed Americans get more food to people that kind of stuff.

**DR. EMERAN MAYER:** Yes, the whole green revolution was became possible, with these monocultures and in the Midwest that food production became so much more efficient. I don't know what percent increase through some of these, What I call chemical agriculture. So that was a good thing. But I mean the bad thing is even if you were banned here there was like a few years ago Bayer bought the patent from Monsanto for the I actually don't remember know if they actually bought Monsanto as a company or just a patents for glyphosate. So they probably bought this because they know it's yeah. It may get banned in the US because I was always wondering why would a company make such a risky investment? But there's the whole developing world they sell this stuff to the developing world and I've recently seen it on a on a trip to Brazil where we spoke at a meeting and then we had time to you know, Took a week to go to this area called Pantanal, which is this beautiful area with some of the highest biodiversity in the world and you drive through this area and on the one side of the road you see an incredible abundance and diversity of wildlife and plants look on on the right side of the road to see endless fields of soybeans and corn and there's there's even signs.

**DR. EMERAN MAYER:** They don't even hesitate to put signs up with which chemicals are being sprayed. And then if I'm not from our guide, What's behind all this is so the Chinese have bought up a lot of land in Brazil under names of Brazilians because I think foreigners cannot do that to that extent and all this corn and soybeans go to China where it's being fed to you know cows and pigs for their own food production, but It's heavily contaminated by these chemicals. It not only destroys the biodiversity in Brazil in this beautiful area But it, it's transported further around the world, into places and I'm sure a company like Bayer knew that, it's that the business will always be there may not be there in the US but it may be somewhere else.

**SHAWN STEVENSON:** That's so unethical just to know like okay, this is banned here we've got good evidence why this is getting taken out of the food supply but the company's like well we could go and make money over here with this same thing because we're making a lot of money and just looking at the margins looking at returns all those things and putting profits over people and that's the problem oftentimes with a lot of this stuff is that it might start off with good intentions. But then there's going to start to be a it's gonna come down to money and being able especially if it's a publicly traded company. Shareholder value is the top-tier most important thing.

**DR. EMERAN MAYER:** Absolutely.

**SHAWN STEVENSON:** And so we've got to again be aware that a lot of this stuff is going on. We've got to get more education out there about that.

**SHAWN STEVENSON:** Hippocrates, the father of modern medicine stated that all disease begins in the gut. We often think of this in terms of chronic diseases, but this holds true for infectious diseases as well, he had a plethora of nutritional treatments for his patients and according to a study cited in the journal frontiers and pharmacology, one of his most notable treatments for preventing infections was propolis. Propolis is time-tested immune support from the world of bees and today numerous peer-reviewed studies are affirming its benefits. One study published in the peer-reviewed journal Antiviral chemistry and chemotherapy

revealed that propolis has significant antiviral effects specifically in reducing viral lung infections. Now a little fun fact is that Hippocrates used propolis both internally and externally for his patients.

**SHAWN STEVENSON:** And again today The external benefits are being highlighted in new studies as well. This study published in Phytotherapy research found that topical propolis that was applied a few times a day. It was three times a day in this study accelerated the healing of cold sores faster than the placebo group. The researchers found that topical propolis not only reduced the amount of herpes virus present in a person's body but it also protected the body against future cold sore outbreaks, one other study and again, there's so many, this is a meta analysis of multiple studies published in the evidence-based complementary and alternative medicine and it found that propolis has antiviral, antibacterial, antifungal and anti-tumor properties. It is well noted to be an immunomodulator that increases the body's resistance to infection. This is one of the most supportive things that you can do for your immune system and it's one of my favorite go-tos that I use on a regular basis. And I'm talking about the propolis immune spray from Beekeeper's Naturals, go to [beekeepersnaturals.com/model](https://beekeepersnaturals.com/model) and you're going to get 20% off their propolis immune spray and also store-wide on their other incredible bee products including their superfood honey and their royal jelly supplement that is incredible for our cognitive function. Go to [B-E-E-K-E-E-P-E-R-S-naturals.com/model](https://B-E-E-K-E-E-P-E-R-S-naturals.com/model) for 20% off.

**SHAWN STEVENSON:** Get yourself hooked up right now with their incredible Propolis Immune Spray. It is something that I always have on hand. I travel with it. It's actually in my bag right now for whenever I'm traveling and on the road and also just keeping my family healthy proactively, especially during cold and flu season. Hop over there, check 'em out. [Beekeepersnaturals.com/model](https://Beekeepersnaturals.com/model) for 20% off. And now back to the show.

**SHAWN STEVENSON:** Your new book, Interconnected Plates that I have right here. Beautiful new book. This was a family affair as well. Your wife had a lot of input into this book. And it's sharing a lot of the most time-tested. A lot of people are hearing about this stuff now, like different blue zones and things like that, but just a lot of the principles that lead to some of the longest lived, healthiest populations and basing your recipes and advice around that. So



can you talk a little bit about the inspiration and some of the science that's in this new, incredible cookbook, *Interconnected Plates*?

**DR. EMERAN MAYER:** The reason I wrote this book, I've spent my entire career. I would say adult life, writing scientific papers. So to write this book, the inspiration came from a couple of sites. One is after I published my first two books, which are heavy on the science aspect, I got a lot of emails, a lot of requests from people and from my patients that said, "yeah, this book was really interesting, but so based on that, so what should I eat then? What's your recommendation?" And I didn't really have the time in my practice to explain this in detail to everybody, so I said, "Okay, we need to write a book summarizing it." But then other things came together, so I'm a big fan of Mediterranean countries, and I've traveled there, and I have friends there, and I've been invited for homemade dinners, and meals, so that that sort of personal preference for that kind of diet has been another incentive and I've mentioned this in the book as well.

**DR. EMERAN MAYER:** Another very important part is that the more I've sort of spent in this field of healthy lifestyle and healthy diet, I've sort of realized that this Mediterranean diet has got a lot of press. It's not the Italian diet, it's not the Spanish diet because that has been changed over the last 75 years as well becoming less healthy that the Mediterranean diet concept is a lifestyle. It's socializing, having meals with family and friends. If you spend a summer evening in any Italian town, you see hundreds of people walking around, talking with friends, eating outside.

**DR. EMERAN MAYER:** It's an experience that you just don't have here. So it's the lifestyle. A lot of countries around in this area also have sort of a strong spiritual connection. I think it's stronger than in other parts of the world. And I would say, the lifestyle is a big component, not just what to eat, but in which context you eat it. And I think people have forgotten this. You can have the healthiest prepackaged meal and eat it in your car or eat it just before a meeting. It's not the same thing. Your brain does not send that message to the gut, now is the time to relax and to digest and to feel good.

**DR. EMERAN MAYER:** So I think that's one thing that really was important. But I think the

main thing was, based on all the writings I've done, and we've talked earlier about this. The importance of these short-chain fatty acids, these anti-inflammatory molecules, Well, the reason you can ramp up the production of these is by eating a diet that's rich in complex carbohydrates or what's also called microbe accessible foods that the microbes turn into metabolites that then include these anti-inflammatory molecules. They also this type of cuisine or type of diet is very rich in these polyphenols. These large molecules that not only are food for the microbes, but the microbes turn them into health-promoting molecules, which are then absorbed in our gut and make it all the way to the brain. So it's a practical application if you ask me, so what can I do to follow your advice if you eat for the health of the microbiome that's best for your own health?

**DR. EMERAN MAYER:** I said it's the recipes, and there's many more recipes. Obviously, we did not make this an exhaustive list of each region in Italy. For example, each region in Spain has their own version or variation on this theme but some of the components and I have a paragraph on this in this book. The four F's of a healthy diet so it's the flavonoids. Flavonoid content is polyphenol's antioxidants. It's the fiber, it's the fatty acids Omega-3 from the fish component and the fourth one is fermented foods. So that originally, I didn't conceptualize this as part of the Mediterranean diet, but when you think about it, cheeses are an important part of it, of the diet. And just like in the French and the Spanish version of the Mediterranean diet...

**SHAWN STEVENSON:** We don't think about mozzarella. Right? It's very different from what we might experience here in the US. As a matter of fact it can be dramatically different.

**DR. EMERAN MAYER:** Yeah, it can be dramatically diff... I mean a lot of cheeses in the US are either yellow or I mean most of them are yellow, orange and the ultra processed is these little hamburger slices you put in a cheeseburger. They're ultra processed cheeses so they would not have any of these health benefits but we know in the meantime for a healthy microbiome, naturally fermented foods are an important component, just like fibers and just like the flavonoids that the polyphenols are.

**DR. EMERAN MAYER:** So it's kind of a really simple recipe. So you take these four

components of food, you put them in delicious dishes, and you eat them in the context of family and friends not being stressed. And you do the best thing for your microbes and for yourself. So it's a very easy formula that science is still revealing the details of which molecules and everything. But I think the basic recommendation that we can make currently is not gonna change. It's... There's also a phenomenon, this high percentage of bread and carbs in the Italian diet, for example, like pizza and pasta and rice, makes up a big proportion of the diet, but it's made from different flour as well, so it's not... I've seen this several times with some patients that I had that did a year abroad in Italy that had a lot of issues with digestion and were convinced this has to do with gluten.

**DR. EMERAN MAYER:** They went to Italy and after one week they would eat pizza and bread and rice and everything. And when they came back, the first thing they had at the airport triggered the old symptoms again. So part of this could be psychological conditioning, but I've heard this from enough people. And yeah, I mean, then you dig deep into this, you see like the grains, the variety of grains that are still, that are grown in Italy. I forgot what the name is, what the number is. I think it's several 100s if not, and it's been reduced to a handful. It's the same thing with the potatoes. If you go to countries that eat a lot of potatoes like in Asia, the variety of these potatoes is much higher than the one or two that we have here that are basically grown to be optimal for french fries.

**SHAWN STEVENSON:** Right.

**DR. EMERAN MAYER:** So it's a seeming paradox that this high content of carbs in Italian diet, Mediterranean diet, that would, this would be good for you, but it's the kind of carbs that this is made of.

**SHAWN STEVENSON:** And you're encouraging, obviously this is through the lens of improving gut health. And truly if folks who've been struggling with health issues in particular autoimmune issues as well, just follow your book and just eat these recipes. The recipes are also beautiful and they're incredibly simple. They're incredibly simple and just real food ingredients, very simple, beautiful, delicious and also you're sharing this book in correlation. There's a PBS special involved, and you wanted to be able to have full control on the creative

aspect and also the education. And so you and your team put this together rather than going through a conventional publisher and you're making this available for everybody.

**DR. EMERAN MAYER:** It's kind of ironic, so one motivation as I said earlier to write this book was that I got all these requests from patients, but what actually triggered it acutely was the fact when I signed this deal with PBS to produce a film, which is coming out actually in a couple of days on Friday, the Brain Gut Connection, it's a one-hour documentary on the same topics of we've been talking about. So they want to have these giveaways and I was a... Spontaneously said, "Yeah, we can make a cookbook and we can make an online course and you can hand out some of my scientific books," and they said, "Yeah, that's a great idea." So now we had nine months to produce this book and from scratch, and I think a lot of passion went into it from the contributors who are women that make these dishes and have learned to make these dishes from their families as a big family tradition.

**DR. EMERAN MAYER:** I mean, we could have just gone to there's many Mediterranean cookbooks out there, gut healthy cookbooks out there. But this has sort of a unique twister, both personal experiences which I mentioned in this book, traveling in Italy, the homemade recipes, and then always with this overarching theme, this has to be good for your gut and your overall health and your microbes and for your overall health. So it was nice to sort of integrate these different elements.

**SHAWN STEVENSON:** And where can people pick it up?

**DR. EMERAN MAYER:** So this is self-published. So if you go to my website, [emeranmayer.com](http://emeranmayer.com) there's a link and you can order the book there. You'll get it between one and two weeks to your house.

**SHAWN STEVENSON:** So this isn't that fast food type of version of a book. This is like slow cooker. [chuckle] You're gonna get something really delicious and healthy, just a little bit more patience. And I highly encourage people to support this project because you're doing this the right way and taking total control of this and not allowing any entity to water this down. And this is the power that we have, you are very, very prestigious and if we're talking about just

the amount of studies that you've published yourself, like you're in an entire, you're in the 0.00000% of the population of scientists. And it is incredible that you're focusing on food and giving people literally the keys to the kingdom on what to eat to improve their gut health and improve their health overall. So I really appreciate that. Go to [emeranmayer.com](http://emeranmayer.com) and get your copy of Interconnected Plates right now.

**DR. EMERAN MAYER:** And when you're on the website, you'll also find a link to sign up for our newsletter, which comes out on a weekly basis with addressing topics, a wide range of topics from human health to gut health to environmental health. So we usually have a mix of those topics which I strongly believe are interconnected. So this theme, this word, interconnected, got into my mind [chuckle] some 10 years ago. And ever since all my projects that I've pursued have this interconnected theme in it, because I think it's the new way of looking at the world. What the big mistake that everybody's been making in the business world, in the medical world science is that we had this linear worldview of thinking that one cause has one effect, and everything else can be controlled for, so the results are statistically significant or, but the collateral damage from that thinking is huge.

**DR. EMERAN MAYER:** I think a lot of problems we see in the world today is that we have lost that paradigm of interconnectedness that everything that we do and interact with has ripple effects throughout the system, which is in some ways is a good thing. So if you do your contribution, you'll have a widespread effect on small effects, but you can also be a bad thing that you spread misinformation through an interconnected like the internet for example. So it's...

**SHAWN STEVENSON:** Yeah, it's just how it's being used and you're helping folks to get connected to valuable real science-backed information. And of course I truly appreciate that. So my guy, Dr. Emeran Mayer, thank you for coming to hang out with us.

**DR. EMERAN MAYER:** Thanks, Shawn, as usual it's a pleasure.

**SHAWN STEVENSON:** Awesome. Well, I appreciate you truly, Dr. Emeran Mayer, everybody. Thank you so much for tuning into the show today. I hope you got a lot of value out of this.

Definitely support Dr. Mayer's incredible new cookbook, this is a great gift to give to family and friends that are wanting to improve their gut health and just health overall. And that's gonna be @emeranmayer.com and you get access to Interconnected Plates. Listen, we've got some epic, I'm talking about epic masterclasses and amazing guests, this gonna blow you away coming up very, very soon, so make sure to stay tuned. Take care, have an amazing day and I'll talk with you soon.

[music]

**SHAWN STEVENSON:** 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 can find transcriptions, videos for each episode, and if you've got a comment, you can leave me a comment there as well. And please make sure to head over to iTunes and leave us a rating to let everybody know that the show is awesome. And I appreciate that so much and take care, I promise to keep giving you more powerful, empowering, great content to help you transform your life. Thanks for tuning in.