



# Essential Alchemy

The Ancient Art of Healing Naturally

---

## Season 1, Episode 27: Probiotics and GcMAF for Rebalancing the Parasympathetic with Marco Ruggiero, MD, PhD

**Jodi Cohen:** Welcome to The Parasympathetic Summit. I'm your host, Jodi Cohen. And I'm super excited to be joined today by Dr. Marco Ruggiero, who has performed research in molecular biology since 1983. You look much younger than that.

Publishing more than 240 scientific articles, including a study sponsored by a Nobel Laureate. He has worked at — I'm going to pronounce this correctly — Burroughs Wellcome company, the National Cancer Institute of the United States, and has been a full professor of molecular biology at the University of Florence, Italy, until his retirement in 2014.

He has found a company for advanced research in the field of probiotics and national nutrition in Switzerland, where he directs innovative research. And I'm so excited that you are here today to help us talk about probiotics in rebalancing the parasympathetic system. So now I'll let you take over the screen.

**Dr. Ruggiero:** Thank you. Thank you so much, Jodi. And I wish to say hello to all the attendees. And I have prepared a PowerPoint slide presentation that will help me following some kind of logic discourse. But of course, since we are in this informal setting, please feel free to interrupt me at any moment, any time that something doesn't sound too clear.

So, I will start by sharing the screen. I'd like to read this advisory because I think it's important to remind that no information in this talk is presented by myself as medical advice.

And of course, I always recommend to follow standard of care for any pathology, as well as the rules and regulations established by health authorities of each country. I hope that somebody will look at this presentation even from other parts of the world, so be certain not to run into trouble.

I also like to disclose my conflict of interest because, as Jodi said, I founded a Swiss company. I am the mentor of a number of supplements, and I've developed the approaches and the products that will be described in this study.

However, in order to avoid any bias, the results that I present today were obtained by independent laboratories in Germany and Belgium. And we try to guarantee the greatest objectivity. The key points that will be covered in this talk are the role of probiotics in rebalancing of the parasympathetic nervous system.



# Essential Alchemy

The Ancient Art of Healing Naturally

## Season 1, Episode 27: Probiotics and GcMAF for Rebalancing the Parasympathetic with Marco Ruggiero, MD, PhD

**Dr. Ruggiero:** And I don't know if you're aware, but we have four brains, not only the one that we have inside our heads but three more of them, and two of them are not human.

I also like to talk about the role of immune system modulators that are produced by probiotics and, in particular, GcMAF, that is the Gc proteinderived macrophage activating factor, and how they protect the central nervous system. And finally, a brief mention about detoxification of the brain through probiotics and immune system modulation.

**Jodi:** This is fabulous. Thank you. I can't wait.

**Dr. Ruggiero:** We have four brains, as they say in Spanish in this interview that they published a couple of years ago, (foreign language 03:21) or we have four brains. So, let's take a quick look at these four brains of ours. And maybe we find something that is amazing.

Brain number one, the brain that is inside our head that has been studied for centuries. This is a very older drawing published in 1543. And the anatomy is still there. This is still valid. So, we usually, when we think about brain, we think about this one, the one that is inside here our skull

Can we do without our brain? Well, yes, apparently, we can. This was published in The Lancet, arguably one of the most prestigious medical science journals in the world, in 2007, and they never retracted, never disproved it. I mean, it's absolutely real. Here we can see the skull of a man without brain, essentially only fluid, only liquid. The brain is this very little, if any thinner.

So essentially, the brain here is absent for about 90%. Nevertheless, this guy is performing very well. He is a blue-collar worker. Sorry, a white-collar worker. He works at the office of the French IRS, the tax office in Marseille. He drives. He has children. He is doing excellently well without the brain or almost without the brain inside his head.

So, apparently, we can do without our first brain. What about the second brain? The second brain is distributed along the gut. It is called the enteric nervous system. Essentially, these white things, these are neurons, cells of the brain that are in the thickness of the walls of the GI tract.

And these neurons are very many indeed. And the enteric nervous system has been described as a second brain for a number of reasons. First of all, it can operate autonomously. So, when we talk about gut feelings is just more than a metaphor because actually, we have a brain inside our gut inside the walls of our GI tract.



# Essential Alchemy

## The Ancient Art of Healing Naturally

### Season 1, Episode 27: Probiotics and GcMAF for Rebalancing the Parasympathetic with Marco Ruggiero, MD, PhD

**Dr. Ruggiero:** Now, here comes the topic of today's talk, the parasympathetic nervous system because the second brain normally communicates with the central nervous system or first brain, if you prefer, through the vagus nerve, the parasympathetic system, and also through the sympathetic system, through the prevertebral ganglia.

Now, this communication is bi-directional. So, it is well true that when we are anxious, our gut is moving maybe too fast because what's inside our heads influences what is inside our guts. But it's also true the other way round because the communication is bi-directional.

The functioning of the brain inside our gut also influences the functioning of the brain inside our heads. However, this second brain is truly a second brain because if you cut, in experimental models, of course, the vagus nerve, the enteric nervous system continues to function autonomously.

So, it's truly a second brain. Now, what about the third brain? The third brain actually was a word that I coined. I even wrote a book about the third brain a few years ago, and the third brain is constituted by the human microbiota. And that is all the microbes we have in all our body from the skin, into the gut, of course, into the air, everywhere.

We should know by now that we are only 10% or even only 1% human. If you go to some learning center — so this is the Genetic Science Learning Center of the University of Utah — it says very clearly that microbes are everywhere and that these microscopic forms of lives represent thousands of species, and they outnumber our own human cells by about 10 to one. So whatever number of human cells we have, we have ten times more microbial cells in our bodies.

But if we look at genes, we have about 22,000 human genes and about 100 times, maybe more bacterial microbial genes in our body. So, we're only 10% or even 1% human. All the rest of the biological information is microbial as this science center tells us that the vagus nerve runs between the gut and the brain carrying information in both directions.

That's important. There is not primacy. This is not the leading brain. All the brains are interconnected. They have equal importance in the functioning of our bodies and our minds.



# Essential Alchemy

The Ancient Art of Healing Naturally

## Season 1, Episode 27: Probiotics and GcMAF for Rebalancing the Parasympathetic with Marco Ruggiero, MD, PhD

**Dr. Ruggiero:** And we know the stimulation of the vagus nerve is sometimes used to treat depression. And they ask rhetorically, could future treatments for anxiety and depression involve manipulating gut microbes? And here comes the question.

And the question is who is manipulating who or whom because if you go and look at scientific articles, you even find that gastrointestinal microbiota is manipulating us. The title is very clear: Is eating behavior — it is our human eating behavior — manipulated by the gastrointestinal microbiota?

And here it reads that microbes in the gut manipulate the host, that is our eating behavior, to increase their fitness sometimes at the expense of the host fitness, but because microbiota are easily manipulatable because we can introduce prebiotics, probiotics, antibiotics, fecal transplants, and dietary changes, then we can manipulate those who manipulate us.

And so, it becomes very interesting. As a matter of fact, the experimental evidence has suggested that the microbes do truly influence our behavior. For example, this is *Mycobacterium vaccae* in a mice experiment. And those mice that received a diet rich in these probiotics, if you want to call it so, they had reduced anxiety and improved the performance in a maze test.

So, it took them a shorter time to exit from the maze, from the labyrinth, and that they had less anxiety. They were performing much better. Think about driving in a congested city.

It would be much better if you could have less anxiety and find your way out of congestion, not to mention if you are in a combat environment in a startling rather like situation. It would be much more useful to have less anxiety and to perform better. So, microbes, they do influence our brains, our minds, our performances. Another paper — and I'm showing you papers that are not very recent for a reason because all this information has been sedimented, has been approved, has never been retracted. Actually, it has been enriched — *Voices from within: gut microbes and the central nervous system*.

Still, again through the vagus nerve, so the parasympathetic system. And they here highlight the role of the vagus nerve writing the vagus nerve has also emerged as an important means of communication signals from gut bacteria to the first brain. And here, they suggest that there is a potential for microbial-based therapeutic strategies to aid in the treatment of mood disorders. So hopefully, the future of no longer psychoactive drugs but psychoactive probiotics. Actually, they are called psychobiotics.



# Essential Alchemy

The Ancient Art of Healing Naturally

---

## Season 1, Episode 27: Probiotics and GeMAF for Rebalancing the Parasympathetic with Marco Ruggiero, MD, PhD

**Dr. Ruggiero:** So, yogurt-like things that influence or rebalance our mood. And again, it's through the working of the vagus system. And this was for the third brain. How about the fourth brain? Well, the fourth brain is actually the brain microbiota, that is, the microbes that are inside our brains.

And actually, I was the first to coin these words, brain microbiota. And this is a scientific article that I published in 2016. You can retrieve it from PubMed. And it is the very first time that the words brain microbiota are mentioned in science. However, I was not the one to first identify microbes inside our brains.

These derive from research performed a few years ago in 2013 by mainly Canadian researchers who found that in the brains of a perfectly healthy individual, you can find microbes, and you can find the common microbes that you find in the soil and water.

Essentially, these microbes that form water today are called brain microbiota. They reach the brain through the immune system. Essentially, you eat, drink, breathe microbes because our food, our water, our air, of course, it's not sterile.

Hopefully, it is free of pathogens, but there are microbes everywhere, and they go essentially in our guts. From the gut, they go up into the brain because they are carried by cells of the immune system that are activated lymphocytes and macrophages. So, essentially, our gut, the third brain, and our brain microbiota, the fourth brain, are connected through the immune system cells like macrophages.

They continuously move toward the brain and from the brain through the lymphatic vessels that are in our necks. And so, they continuously recirculate and balance the two microbial populations. Now, we have now bacteria and yeast and microbes in our brains. What do they do?

Well, according to this autopsy, their capacity for influencing brain function is nothing less than immense. So immense, I think in English and in many other languages is superlative.

So, there is nothing bigger than immense. And they say that the influence of these microbes that we have normally in our brains on our functioning is immense.



# Essential Alchemy

## The Ancient Art of Healing Naturally

### Season 1, Episode 27: Probiotics and GeMAF for Rebalancing the Parasympathetic with Marco Ruggiero, MD, PhD

**Dr. Ruggiero:** And also, and this is very interesting. It is quite possible that the presence of microbes inside our brains is responsible for the evolution of our brains. Why? Because when they checked for microbes in other mammals, they only found them in primates, in monkeys, apes, and humans, not in cats and dogs and other mammals.

So, it could be argued that the functioning of our brains, the evolution of our brains, is or maybe also due to the presence of these microbes that you do not find in other mammals. We did an experiment a few years ago. Essentially, we took some human neurons and put them in a Petri dish.

So, you can see here the border of a petri dish, and these little things here are human neurons. And you'll see they sit there. They are quite well. I mean, they don't do anything in particular. You can see these elongations. These are called neurites or axons are those that are in our brains, all our brains. They form connections.

And it is through these circuits or webs of connections that consciousness and intelligence, whatever it is, arise. So, look at this. This is the way neurons behave when they're put in a Petri dish. Essentially, they don't do anything. They survive. They seem to be happy.

Now, if you put in this same Petri dish together with these neurons microbes, like the same microbes you can find in a probiotic yogurt and, of course, we used what we had and what we knew.

So, we used our product. Now, look at what happens. First of all, where are the microbes? The microbes are these very little tiny dots. They are scattered all over the Petri dish, all these tiny dots, everywhere, but look at the neurons what they've done.

They have formed circuits, so they have rearranged their shapes, and they have rearranged their elongations. Actually, they've also proliferated, so you have more neurons than before.

So, you just compare this slide, here each neuron is for itself, and here the neurons they form a circuit. You can easily identify a bigger circuit and then a smaller, like a bypass, because we never think in a simpler way. We think in many ways.



# Essential Alchemy

The Ancient Art of Healing Naturally

## Season 1, Episode 27: Probiotics and GeMAF for Rebalancing the Parasympathetic with Marco Ruggiero, MD, PhD

**Dr. Ruggiero:** So, you see here the formation of a web of connection that is typical of neural or neuronal circuits or web. So, to summarize this first part of my talk and then, of course, you can interrupt me or ask for questions, or we can proceed, and maybe you can have all the questions at the end.

So, we have four brains. They are closely integrated, and they are integrated through the parasympathetic system, vagus nerve. Two of these brains that comprise the majority of cells are not human, and their influence on the human counterpart is immense.

The microbes probably were instrumental in the evolution of our first brain, the one inside our heads. And as of today, we have to consider microbes as cells of the brain, just like the neurons or the glial cells.

Microbes, they manipulate our will for their purposes, but we can manipulate our microbial composition. So, it's recursive. And if we do things well, both microbial population and our human cell population, they benefit from these interactions. Microbes are responsible for the balance of the parasympathetic system. And we will talk about these in the next couple of slides.

And the immune system is the connection between the four brains. So, if I may, I will like to highlight how the microbes are responsible for the balance of the parasympathetic system. Well, there are many scientific articles, peerreviewed scientific articles demonstrating this.

I found in *Frontiers in Neuroscience*, one of the most prestigious and incredible journals in science, an entire research topic, six articles dealing exactly with this topic, *The Vagus Nerve at the Interface of the Microbiota-Gut-Brain Axis*.

Actually, this was published by researchers from Grenoble in France, near Mont Blanc, a beautiful place. And you can go and read all these papers. They are available for free. You can download them for free, but essentially, there is a universal consensus that it is the vagus nerve that connects the function of the second brain, the third brain, and the brains that are inside our heads.

And as I said before, when I mentioned the paper with the *Mycobacterium vaccae*, essentially, if we have the proper array of microbes in our guts, in our brains, then the parasympathetic system is naturally stimulated.



# Essential Alchemy

The Ancient Art of Healing Naturally

## Season 1, Episode 27: Probiotics and GeMAF for Rebalancing the Parasympathetic with Marco Ruggiero, MD, PhD

**Dr. Ruggiero:** Of course, we can stimulate the vagus nerve with a number of devices, electrical devices, or even with manual massage. But in this case, it is probably the most natural way of stimulating, or I prefer to say balancing the parasympathetic activity.

Let me take a look. Let me show you how we studied together with Dr. Klinghardt, Dr. Schaffner the vagus nerve because usually, we look at the vagus nerve in drawings, like all the anatomical drawings like these, but we can see it in a live individual.

And actually, we published these in this paper, published together with Dr. Klinghardt in the *American Journal of Immunology* entitled *The RuggieroKlinghardt (RK) Protocol for the Diagnosis and Treatment of Chronic Conditions*.

In that case, we particularly focused on Lyme disease. Then we published other articles with focus on autism and other conditions. So, essentially, this is the way the vagus nerve looks at ultrasonography.

This figure comes from that paper. So, it's a shaped like a triangle. This is an axial section. So, the vagus nerve is something long elongated, but if you cut, like if you cut a slice of something, then you see it like this.

And actually, you can study what is happening inside, the flow of signals. And you can study whether the parasympathetic system through the vagus nerve is working appropriately or not. After this paper, I think about one year ago we published another paper. This one that was also by Dr. Pacini and myself and still in the *American Journal of Immunology*, where we were able to measure what are called quantum signals flowing through the nerves.

So now these might become very complicated, and I don't want it to be too boring, but you probably have heard about quantum biology, quantum entanglement, the spooky action at distance, as it was mentioned by Albert Einstein.

Now, all these things that look, sound very exotic or may be confined to the realm of physics of sub-particles things, no, they occur in our bodies, and this is pretty well assessed. And now we can measure these things. We can study these things with a common ultrasonography system, and these are the signals flowing through the nerves. And some of them, they are doublets, two things that are the same. Like these typically quantum entanglement signal, these are not, this is yes, this is not, this is not.





# Essential Alchemy

The Ancient Art of Healing Naturally

---

## Season 1, Episode 27: Probiotics and GeMAF for Rebalancing the Parasympathetic with Marco Ruggiero, MD, PhD

**Dr. Ruggiero:** So, by studying these sorts of information flowing through the nerves in live individuals-- I think this was my nerve. I don't remember whether it was my nerve or the nerve of Dr. Pacini or one of the two.

So now, we can study the flow of quantum signals through the nerves. These will take completely another hour longer talk. Just to give you a hint, these things are doable. They are not exotic. It can be done with very little expense in slightly more than five or 10 minutes.

Let's move to the other topic, the immune system, and how does it connect the four brains. Now, the macrophages are the key elements of the immune system that connect the four brains.

Therefore, if we want to rebalance the four brains, if we want to naturally stimulate the vagus nerve, we need at the same time to rebalance the microbiota with healthy microbes.

And this is relatively easy because we have four pillars of probiotics that reproduce the healthy human core microbiota. But at the same time, we have to stimulate or activate the macrophages so that they can transfer the information from the gut to the brain.

So that's why many times, if you use only one of the two approaches, it doesn't work. So, you can reconstitute the gut microbiota with good probiotics. But if you do not activate the macrophages, they simply stay there. Of course, they do a lot of good in the gut, but they do not influence the brain function.

**Jodi:** I really want to make sure we land on that. So, what you're saying is you can't do one or the other? You have to do both in combination?

**Dr. Ruggiero:** If you want to rebalance the gut and the brain microbiota, you have to do both in combination because otherwise, the good microbes they stay in the gut. They do a lot of good in the gut, no doubt, but they do not go up into the brain, and they do not rebalance the two populations unless you stimulate macrophages. But this is true also the other way round.

If you only stimulate the immune system without reconstituting the microbiota, of course, you improve the functioning of the immune system, and this is good in and by itself, but you do not balance the two populations, so you have to do both at the same time, possibly with one single solution. And that's what we did.



# Essential Alchemy

The Ancient Art of Healing Naturally

## Season 1, Episode 27: Probiotics and GcMAF for Rebalancing the Parasympathetic with Marco Ruggiero, MD, PhD

**Dr. Ruggiero:** We began working on macrophages in 1990, a long time ago when I was working at the National Cancer Institute or the NIH. This is the paper we published in August 1990. This is myself.

And 20 years later, since 2011, we developed a novel approach to produce a natural-like GcMAF, a macrophage-activating factor, natural, not chemical, not pharmacological by fermenting milk and colostrum at first.

So, making sort of a yogurt or kefir and later, since not everybody's happy with their reset to do the same, fermenting non-dairy products like hemp seed proteins or fruit juice. The goal was, and it still is to exploit the synergies between macrophage activation by GcMAF and the reconstitution of the healthy microbiome so to help rebalance the four brains with one single shot.

In a very recent article that was published a few weeks ago, we demonstrate that actually, the GcMAF activity against the nagalase, an enzyme that decreases the function of the immune system in our product, is 100 times more than chemical or a purified GcMAF.

Now, these experiments were performed by an independent laboratory, the R.E.D. Laboratories from Belgium. I take the opportunity to thank Dr. Tanja Mijatovic for producing these results. The experiments were performed invitro, so no variable or confounding variable. In the test tubes, there were only human nagalase, that is the enzyme that destroys the GcMAF or the precursor of GcMAF in our product.

And so, this is the article published in the American Journal of Immunology. You can download this article for free. It was published together with Dr. Michael Carter, who actually is the first author.

These are the histograms, the columns demonstrating that at all times from time to zero up to 72 hours, our product was 100-fold more potent in inhibiting nagalase or binding nagalase than purified GcMAF.

Again, I realize it's very biochemical, very boring, at least for me, but this is to say that we can naturally produce a probiotic that is also rich in macrophageactivating factor. And it is so rich that it is 100 times richer than purified GcMAF.



# Essential Alchemy

The Ancient Art of Healing Naturally

## Season 1, Episode 27: Probiotics and GcMAF for Rebalancing the Parasympathetic with Marco Ruggiero, MD, PhD

**Dr. Ruggiero:** Why it is so more active is because it is in its own environment. GcMAF is associated with vitamin D3, fatty acids, and glycosaminoglycans such as chondroitin sulfate. All of these are normal constituents of milk and colostrum, and also of other media that I describe later.

And actually, this is something rather old because it is since 2013 that we proposed a molecular model describing how this thing works. Also, this paper can be downloaded for free, and it describes why GcMAF, together with all the other components, is [inaudible] but there is also something else that adds complexity to an already complex situation, phages or bacteriophages.

Bacteriophages or phages are viruses, and in this time of the year, talking about viruses and friendly viruses might sound somehow ironic since we are in the midst of the pandemic of COVID-19, but these are truly friendly viruses because the phages are the viruses that kill the bad bugs if you want to call them so.

And actually, phages therapy has been heralded for 150 years. It has always been used in the former Russia, Soviet Union, or Republic of Russia today, and it is being rediscovered in Western medicine as well. Now, in our products, we have phages, and we have published papers on this in this bioRxiv and also in this Journal of Neurology & Stroke.

All these papers that I'm mentioning, they are accessible for free. And essentially, these phages, they produce proteins that stimulate the immune system. And so, they add up to the action of GcMAF. And this is not a surprise because it is well-known that phages modulate the immune system, activate macrophages, help fighting infection and exert anti-inflammatory actions.

Words from an article published by scientists from Belgium, California, Poland, and Australia reads: phages also impact immunity directly in ways that are typically anti-inflammatory. Phages can modulate innate immunity via phagocytosis. That is the stimulator to macrophages to eat all poisonous toxins, bad bugs, whatever. And they also impact the adaptive immunity via effects on antibody production and effective polarization.

Complex words to say that phages they truly help our immune system in a very natural and positive way. And as this figure from this paper clearly demonstrates, the macrophages are at the center of the action of phages, and they say, and it is absolutely true: independent of the route of administration, if you eat phages with our products, phages they enter the bloodstream and tissues and encounter immune cells in the blood.



# Essential Alchemy

The Ancient Art of Healing Naturally

## Season 1, Episode 27: Probiotics and GcMAF for Rebalancing the Parasympathetic with Marco Ruggiero, MD, PhD

**Dr. Ruggiero:** And here, you see the macrophages are at the center of these very complex networks of interactions between all the cells of the immune system, from neutrophils to natural killer cells. At the same time, we have our GcMAF and GcMAF-like proteins produced by phages, so that stimulates the macrophages.

So, we have the perfect storm or maybe the perfect combination to stimulate the immune system through phages, macrophages at the same time rebalancing the gut microbiota. And now, let me move toward the end of this presentation, and then I'm open for all types of questions.

Hemp seed protein, we have found a way, and that's a proprietary procedure — I am not aware of any other way to do this to ferment hemp proteins — in order to combine the effects of reconstituting the healthy core human microbiome with the effects of fermenting the hemp proteins.

Now, if you take hemp seeds, you don't find any THC. You don't find any CBD. You only find proteins, edestin, 60%–80%, and albumin the rest. Just go to Wikipedia, not a reliable source for many things, but reliable for this one. Edestin has a unique ability to stimulate the manufacturing process of antibodies, so it stimulates the immune system.

It is similar to serum globulin, so that is the protein that we have in our plasma, and the biological reactive protein of edestin is metabolized in the human body, and it is capable of synthesizing hormones, hemoglobin for the transport of oxygen in blood enzymes, and antibodies.

So, edestin is a protein with immunological properties, and once we ferment it, actually we obtain vegetable GcMAF. This is the way we do science these days, so-called in-silico, that is, toy computer experiments.

Essentially, we compare the amino acid sequence of edestin and of the precursor of GcMAF human vitamin D binding protein, and all these indigo squares indicate areas of similarity.

To make it short, we were able to produce vegetable GcMAF from fermentation of hemp seeds proteins. If you want to look at the details of these articles of ours, *Fermentation of hemp seed proteins leads to formation of peptides that share sequence similarity with human vitamin D-binding protein* — this is the precursor of GcMAF.



# Essential Alchemy

## The Ancient Art of Healing Naturally

### Season 1, Episode 27: Probiotics and GcMAF for Rebalancing the Parasympathetic with Marco Ruggiero, MD, PhD

**Dr. Ruggiero:** It was published in The Journal of Medical Research and Innovation 2020, and you can read all the details.

As I said, we were able to produce hemp-derived vegetal GcMAF. And now the last two slides: detoxification of the brain through probiotics and immune modulation.

Also, these, like everything else I've said in this talk, has been scientifically proven. I don't like to talk about things that have not passed the peer-review process and have not been published in peer-reviewed articles.

So do we have scientific evidence that by reconstituting the gut microbiota, the brain microbiota, by stimulating naturally the vagus nerve and by stimulating naturally the immune system, do we have evidence that all these leads to actual detoxification because we are, unfortunately, exposed to a number of toxins, metals, non-metal toxins of all types from dichlorophenolate to Agent Orange and everything else, unfortunately, is present in our polluted world?

So, do we have scientific evidence? And the answer is yes. Actually, this was published two or three years ago in The Madridge Journal of Immunology. And it is co-authored by a retired medical doctor from Indianapolis, USA, Dr. Blythe, myself, and Dr. Pacini.

And actually, what did we see? This doctor, for a number of reasons that you can easily read in that paper, was exposed during his long life to a number of toxicants from Monoethylphthalate to Hydroxyisobutyric Acid, Perchlorate, Agent Orange, and sort.

So, unfortunately, and these are lab data that he obtained independent of us, of course. So, before any treatment, his body was unable to eliminate all these toxins. So, essentially, what they did, they measured all these toxicants in the urine, and they found this value.

Now, in three months of reconstituting his gut and brain microbiota and naturally stimulating his immune system through the strategies that I've explained thus far, you can see that the rate of excretion, the rate of elimination of all these toxins is greatly increased from 1,900-something to 3,300-something, from a 4,000 to 7,000, from nondetectable, i.e., he was unable to eliminate this N-acetyl phenyl cysteine to detectable, from 70 to 135. So, each one with a different trait, but these clearly showed and then, of course, we have other cases that we have published, and we are also in the process of publishing, but this has been sedimented. It has been there, for now, a few years.



# Essential Alchemy

The Ancient Art of Healing Naturally

---

## Season 1, Episode 27: Probiotics and GcMAF for Rebalancing the Parasympathetic with Marco Ruggiero, MD, PhD

**Dr. Ruggiero:** So, with this approach, you actually eliminate whatever toxicants that are present in your body, whether inside your brain or in other parts of the body. Now, this was the last slide. I know I talked too much because I took the entire 40 minutes. That was the maximum time limit allowed, but I want--

**Jodi:** For you, we'll go along. I have a couple of questions

**Dr. Ruggiero:** And I am here to answer your questions. I think we don't need to share the screen any longer.

**Jodi:** Okay, great. Well, first of all, thank you. That was fascinating. And I loved all of the latest research. I want to make sure that everyone kind of lands on what you shared because I think it's fabulous. So, the main points that I took away is that we have microbiome not only in our gut but also in our brain.

And they speak to each other through the vagus nerve. And if we can help the vagus nerve through the immune system carry the healthy microbiome from the gut to the brain, we can help activate better things in the brain and also detoxify the brain. Did I get that right?

**Dr. Ruggiero:** That's absolutely correct. Also, I didn't mention it because that was the objective of three or four talks I gave with Dr. Schaffner at the Sophia Health Institute, the role of the brain lymphatic system, that is, the lymphatic system that helps the brain eliminate whatever toxins metabolites that are there.

It runs exactly next to the vagus nerve, so with some approaches that we developed together with Dr. Schaffner and Dr. Klinghardt, like the Sophia flow cream, we can help with the flow of lymph from the brain so further helping the elimination of toxins, viruses, and whatever unwanted is in our brains.

So, it's a bi-directional communication. We want to stimulate the vagus nerve, the immune system, and rebalance the microbiota. And if we can do these three actions at the same time, all the better.



# Essential Alchemy

The Ancient Art of Healing Naturally

---

## Season 1, Episode 27: Probiotics and GcMAF for Rebalancing the Parasympathetic with Marco Ruggiero, MD, PhD

**Jodi:** Yeah. And I wanted to talk a little bit about the neck and how the lymphatic system and the vascular system kind of interact with the vagus nerve. How those can help and hinder each other, and how we can work with your flow cream and other products to kind of improve bi-directional communication.

**Dr. Ruggiero:** Yes. Well, until, I think it was 2014 or 2015, it was a thought that the brain was kind of isolated from the rest of the immune system. Then it was discovered by researchers in Virginia and elsewhere that actually the brain has its own lymphatic system, the waste disposal system as it was called, and I think it is a proper definition.

So, the lymph coming from the brain drains into the deep cervical nodes. So the deep cervical nodes are lymph nodes that are here next to our carotid arteries and jugular veins. And from there, it goes into the general circulation, and it is eliminated through the kidneys and liver as all the lymph.

Now, the point is that the same deep cervical nodes, they drain the lymph coming from the nose, from the mouth, from the ears, from the throat. And it is very common to have a sore throat or to have a cold or to have some inflammation, infection in our mouth, in our nose. I mean, that's extremely common.

Now, since the lymph coming from these anatomical organs also drains in the same nodes, it is also very common to have inflamed or engorged, or enlarged lymph nodes. I mean, that's a common occurrence, so you have a bad tonsil, and you have a larger lymph here, nothing to be worried about, but it's very common. Or even you have a sore throat and, again, enlarged lymph nodes because they're inflamed.

Actually, they perform their function, that is to entrap the lymph and stimulate the immune system and get rid of whatever unwanted is there. The problem is that if these lymph nodes are engorged, clogged if you want to use kind of hydraulic or plumber jargon. If they're are clogged, the lymph from the brain cannot drain. It accumulates.

Now, the problem is that the first brain is in a closed cavity. This skull cannot expand. And so, you have accumulation of lymph inside the skull. And if you accumulate a liquid in a region that cannot expand, it exerts pressure, inflammation, disruption of neuronal connections, disruption of the balance between the microbiota, the microbial cells, and the neurons and glial cells.



# Essential Alchemy

The Ancient Art of Healing Naturally

---

## Season 1, Episode 27: Probiotics and GeMAF for Rebalancing the Parasympathetic with Marco Ruggiero, MD, PhD

**Dr. Ruggiero:** So, everything goes wrong. So, you may think a cold or a sore throat is nothing, and it is nothing except for the fact that it blocks the flow of lymph from the brain.

Now, using a strategist like manual lymphatic massage, using strategies like the Sophia flow cream that again combines immune system stimulation together with the microbiome reconstitution, and so on, then you can remove this clog.

You can favor the lymph from the brain, and you see a number of positive effects. Dr. Antonucci, who is a specialist in autism, has published a paper with significant clinical results by adopting this method in the context of the Ruggiero-Klinghardt Protocol.

And so, yes, I have seen demonstrable and measurable clinical improvement in children with autism using these strategies. And of course, the strategies are extremely simple, rather inexpensive. And so, it's so simple that one may wonder how it comes to that. For centuries, it has stopped being adopted, but this happens all the time.

**Jodi:** Can I ask one thing. I have wondered if congestion in the lymph compresses the vagus nerve and impedes its signaling?

**Dr. Ruggiero:** It does. It absolutely does. And you have the added advantage that when you practice the so-called lymphatic drainage massage here, you also practice manual stimulation of the vagus nerve.

Now, with ultrasonography, as I had shown before, we can measure the flow of signals inside the nerve, and as of today, also the flow of quantum signals.

And so, we can easily demonstrate the before and after. So, we measure the flow of signals inside the vagus nerve before the massage, after the massage. And we can demonstrate in a very objective way that we restore the conductivity of the vagus nerve.

**Jodi:** I really want to land on that because I don't think people understand because the lymph is so easily dismissed. By helping to move lymph flow, you alleviate congestion and remove pressure on the vagus nerve so it can function properly. So, there are many things that you're doing, but I think one of the most amazing things that your flow cream does is it helps naturally restore balance and flow. And I'm curious if it also affects blood flow to and from the brain?





# Essential Alchemy

The Ancient Art of Healing Naturally

---

## Season 1, Episode 27: Probiotics and GeMAF for Rebalancing the Parasympathetic with Marco Ruggiero, MD, PhD

**Dr. Ruggiero:** Yes, it does. I think we have a couple of figures in those papers published together with Dr. Klinghardt. It does increase the venous blood flow. The arterial blood flow, unless you have big atherosclerotic plaques on your carotid arteries, that doesn't need to be increased. I mean, usually, it works pretty well.

What may need to be increased is the venous or the vein-like, the jugular vein, and all the veins inside the brain that sometimes may have a slow flow. According to some theories, some neurodegenerative diseases like multiple sclerosis are due to an obstacle in blood flow from the brain through the veins.

And actually, there have been interventions, surgical interventions to remove this blockade. This has been ostracized and criticized. I think it was an Italian researcher named Zamboni who first proposed these, and there have been papers pro and against, a lot of debate.

Whatever the case, the flow cream does increase the venous return from the brain. And as I said, I don't remember whether I showed those pictures at one of the several talks I gave at the Sophia Health Institute or whether it is published in one of our papers. I've lost count, and I must confess that--

**Jodi:** You've done 250. You're allowed to lose count. I do have another question. I know that Dr. Klinghardt notices vagus nerve toxicity in 98% to 95% of his clients. And that means the vagus signal isn't functioning. And that can be from infections in the jaw and the mouth, even perhaps mold.

I'm curious. When you start to kind of improve lymph flow, I'm guessing that vagus nerve toxicity is-- Well, I'll let you speak about it, but I'd love for you to talk about vagus nerve toxicity, and also how that can be healed from improved lymphatic flow.

**Dr. Ruggiero:** Well, as I said, we can demonstrate these not only clinically but also with imaging, with ultrasound that we can demonstrate that the flow of information inside the vagus nerve improves after the manual lymphatic drainage for two reasons.

One is that we remove the pressure that the engorged lymphatic vessels and nodes exert on the vagus nerve because anatomically, they're located over there. And secondly, because we manually stimulate the vagus nerve and so I said the flow of information is bi-direction.



# Essential Alchemy

The Ancient Art of Healing Naturally

---

## Season 1, Episode 27: Probiotics and GeMAF for Rebalancing the Parasympathetic with Marco Ruggiero, MD, PhD

**Dr. Ruggiero:** We favor the flow of information from the brain to all the organs, but also from the organs and mainly from the microbes in the gut to the brain so in this direction.

So, essentially, after such a lymphatic drainage massage, possibly with the Sophia flow cream, you not only experience clinically or subjectively the stimulation of the vagus nerve or the parasympathetic system, which is something very easy to assess.

I mean, it's so easy that you simply measure blood pressure or heart frequency, and you can see it. I mean, it's very easy. You can do by itself with no other tool than simply a chronometer and measuring the heartbeat, the frequency of the heart, or also with a common finger manometer that is one of those devices to measure blood pressure. And you see blood pressure goes down, and this is a clear sign of a parasympathetic activation.

And if you want to be a little bit more sophisticated, or if you want to do research, then you can measure the flow of signals inside the vagus nerve with ultrasonography. And if you want to be even more exotica, the flow of quantum signals through the vagus nerve.

Now, quantum entanglement, as I said, is a very complex thing, but the more we entangle our brain and our vagus nerve and our microbes, the more entangled or connected, if you prefer to say, we are and the better it is. Then we can discuss, and actually, this will be the topic of our next talk with Dr. Schaffner.

Through biological quantum entanglement, we can connect ourselves with other individuals at the quantum level. This explains why the ART, Autonomic Response Testing works. And let me anticipate that we can now expand these concepts because applied kinesiology or Oura Ring or ART, as of today, you need a very extensive training.

And I would say only a few gifted individuals are able to do this. They naturally connect at the quantum level with other people. That's why they can feel if there is something wrong and what is this something that is wrong.

But thanks to some development in quantum biology and ultrasounds, now we can help connecting people at the quantum level through ultrasound so neuro microtubules. I mean, let's not spoil the next session.



# Essential Alchemy

The Ancient Art of Healing Naturally

---

## Season 1, Episode 27: Probiotics and GeMAF for Rebalancing the Parasympathetic with Marco Ruggiero, MD, PhD

**Jodi:** You are always so far ahead, and I'm so grateful to you and your time and your research. You've really helped. I think I believe that the neck is the big bottleneck in healing, and if you can improve lymphatic flow, improve vagus nerve communication, improve blood flow, you can go a long way to improving everyone's health. So, thank you so much for your time and your brilliance.

**Dr. Ruggiero:** Thank you. Thank you for this great opportunity. Again, I realized that there was kind of rambling through complex topics. So, I apologize for this, but in my excuse, I can say that these topics are very fascinating for me.

And so, sometimes I lose track of my train-sort, and so I'm rambling through things that I realize that might sound very difficult, but I'm fully available to give out any other information.

And if you want to know more about my research, just go to Google Scholar, type my name, and you can find all those 240-some articles. Most of them, at least those published in the past five or six years, are all in the public domain.

We don't publish any longer in journals that require subscription or paying for looking at the articles. And they're all available.

**Jodi:** And they're amazing. And you're so far ahead, and thank you for sharing your brilliance.

**Dr. Ruggiero:** Thank you.