

[FAB THINGS»](#)
[STORE](#)
[Press & Praise»](#)
[Freebies](#)
[SYMPTOMS](#)
[NEED HELP?](#)
[START HERE!»](#)
[THE LOW HISTAMINE CHEF](#)

ELIMINATION DOESN'T HEAL, NUTRITION DOES

SIGN UP FOR YOUR FREE 25 PAGE EBOOK TASTER OF MY HIGH NUTRIENT DIET

<input type="text" value="Full Name"/>	<input type="text" value="Email"/>	<input type="button" value="Submit"/>
--	------------------------------------	---------------------------------------

[Interviews](#)

Harvard neuroscientist Dr. Michael Van ElZakker: chronic fatigue vagus nerve link

54 08 December 2015

Like 18K



Tweet



*In today's interview Harvard and Tufts neuroscientist Dr. Michael Van ElZakker shares his fascinating new paper *Chronic Fatigue from Vagus Nerve Infection: A Psychoneuroimmunological Hypothesis*. His hypothesis proposes that an infection of the vagus nerve can cause greatly exaggerated chronic sickness responses like fatigue, pain and more. Our interview also touches on the mast cell link right at the end.*

[Click here to listen to the podcast](#) or read the transcript below.

[You may also want to read my post on vagus nerve stimulation](#) and [my post on the vagus/mast cell link](#).

Yasmina:

Joining me today is Michael Van ElZakker, PhD, a neuroscientist affiliated at Massachusetts General Hospital, Harvard Medical School, and Tufts University. He has two primary research interests. The psychiatric condition Post Traumatic Stress Disorder, or PTSD, and the neuro-immune condition known as Chronic Fatigue Syndrome. Dr. Van ElZakker has authored a number of peer-reviewed studies, but one in particular has struck a chord in the immune dysfunction community. *Chronic Fatigue from Vagus Nerve Infection: A Psychoneuroimmunological Hypothesis*.

Our discussion today revolves around this hypothesis, a very interesting one in which Chronic Fatigue Syndrome, or CFS, is proposed to be caused by an infection of the vagus nerve. Dr. Van ElZakker, thank you very much for joining me here today. Before we jump into our discussion, could you please tell our audience a little bit about your specialty of psychoneuroimmunology?

Michael:

Sure. And thanks, Yasmina. It's nice to meet you and I appreciate you having me on. So psychoneuroimmunology is essentially a relatively new area of research. Western medicine is very good at breaking things down into components and reducing. And we look at cellular mechanisms and the mechanisms of even individual proteins and systems. And so historically, the nervous system and the immune system have been studied separately, and psychoneuroimmunology is a relatively new field in which it's recognized now that the immune system can affect the nervous system in a way that affects behavior and experience. So that's the psychoneuroimmunology, behavior, brain and immune system.

Yasmina:

Indeed, there's been some fascinating studies coming out recently about the link between inflammation and depression, for example, that have been absolutely fascinating to read. Can I just ask you to outline for our audience what are the main symptoms of Chronic Fatigue Syndrome?

Michael:

Chronic Fatigue Syndrome, of course, is different than feeling chronically fatigued. Chronic Fatigue Syndrome is a neurological condition. It's a disease that one of the main symptoms is a long-lasting, severe fatigue. Again, this is medical fatigue. It's not the kind of fatigue that I have after a day at work where I need to just recharge for a few minutes and then I can go out. Medical fatigue is a lot more severe and debilitating and there's a couple of other systems that tend to go along with Chronic Fatigue Syndrome, or CFS, like muscle pain, your sleep is not refreshing, a lot of people report having brain fog, trouble concentrating or remembering things. Sometimes people have headaches or sore throat or sore lymph nodes. And in general, the defining feature of Chronic Fatigue Syndrome is that after exertion, all of these symptoms get worse.

Again, if I were to, untrained, run a marathon, I might have a really severe time recovering, but for someone with Chronic Fatigue Syndrome, that may be just walking around a shopping mall for the afternoon. And if it's severe enough, for some people that's even getting up and going to the bathroom and going back to bed.

Yasmina:

Absolutely. I think many out there listening to this today have had that experience.

Could you please tell us a little bit about the vagus nerve and its role in the body?

Michael:

Yes. The vagus nerve is really a fascinating organ. It's one of the cranial nerves and it's a unique cranial nerve in that it innervates the trunk, the torso, the organs. It actually innervates all of the major trunk organs and it's a bi-directional nerve. We call it a mixed nerve. It's got fibers going from the brain to the organs, controlling them, and then it's got fibers going from the organs to the brain, which is a way of letting the brain know what's happening in the torso, in the body.

The function of the vagus nerve has really come to light over the last 20 or so years. Essentially, when someone gets sick with anything, we all recognize that we have a pattern of symptoms. We have a low-grade fever, we feel tired, we can't concentrate as well, we don't feel like exercising or eating, and this is called the sickness response. It's a broad response to any kind of pathogen. It turns out that the vagus nerve is really important for this process.

And so, essentially, when molecules are released by innate immune cells, and there's all different kinds of innate immune cells. White blood cells and mast cells included, glial cells, they release proinflammatory cytokines, which are a molecule that call other immune cells to the area of the infection or injury and they cause activation of these immune cells. They also change behavior and they make you feel really tired, unrested, you feel sore. But the interesting thing is that these cytokines don't easily cross the blood/brain barrier. In other words, they don't just flow through the blood and go right into the brain easily.

How is it that say an infection in your lungs can cause you to have all these changes in your subjective experience, like feeling really exhausted and sore? Well, the vagus nerve is really important for that. The vagus nerve actually detects cytokines in the periphery and then sends a signal to the brain, essentially letting the brain know that the body is sick.

There were some important studies done at the University of Colorado, for example, where I got my bachelor's and master's, where they would pick a rat and inject them with E. coli, say, some sort of a bacteria that would make the rat sick. And of course, the rat acts sick. It doesn't run on a wheel, it doesn't eat as much, it doesn't socialize. That's true unless you cut the vagus nerve, and then the rat acts normally. It's essentially, its brain doesn't know that its body is sick.

That's one of the really important functions of the vagus nerve, of which there are many, but that's one of the important functions of the vagus nerve, the sensory vagus nerve that goes from the organs to the brain.

Yasmina:

Okay, I'm going to come back to that in a minute because I want to ask you a question about that, but how is an infection of the vagus nerve ... We understand now that the vagus nerve is kind of a messenger nerve, in essence. It's sending the signal to the brain. What kind of bacterial or viral infections are predominantly linked to this kind of infection of the vagus nerve that you've been seeing?

Michael:

I just want to make sure to clarify that this is a hypothesis and we're working on proving it, we're working on demonstrating that it's accurate, or finding evidence. According to the hypothesis, there are a lot of pathogens that really like nerve tissue. That includes chicken pox, the herpes zoster virus, Epstein-Barr, HHV-6, some kinds of enterovirus, even the Lyme bacteria is a bacteria that really likes nerve tissue. I would say, not coincidentally, all of those are also pathogens that are linked to Chronic Fatigue Syndrome.

The idea is that if the vagus nerve is this very sensitive detector of inflammatory markers, though it's essentially an infection detector, right?

Yasmina:

Mm-hmm (affirmative).

Michael:

You can have a really small, localized infection, let's say in the lungs, you've got a flu or something. The vagus nerve is very highly branched, so it's got tiny little branches and tentacles all over your trunk and it's able to pick up a tiny little signal of cytokines, which are produced. In general, they're produced very locally. And that little infection is enough to change your subjective experience, to make you feel really tired and sore, give you brain fog and things like that.

The hypothesis is essentially what would happen if one of these pathogens that really like to live in nerve tissue actually infected the thing that's supposed to detect infection? The idea is that you get an exaggerated signal coming from the vagus nerve, where essentially the brain gets an erroneous signal that the body is extremely sick with viruses and bacteria, even though it's really about the location of the infection and not the severity of it.

Yasmina:

In your hypothesis, do you believe that you'll find when you start the ... What is it that you'll be doing exactly to prove the hypothesis? What is it that you're working on?

Michael:

Right now, we're doing a study where we're using a combined MR and PET, so magnetic resonance like when an athlete gets injured, they have an MRI scan. It's got very good spatial resolution. You can really see clear pictures inside the body and that is combined with PET, or positron emission tomography, in which a research participant or patient is injected with a substance that the machine can detect. What we're looking for is increased cellular activity in the brain stem in a place called the nucleus of the solitary tract, which is where about 80 percent of these sensory vagus nerve fibers have their cell bodies.

This is essentially the place where the vagus nerve enters the brain. The idea is that if we can see extra signal there, there's more activity there in Chronic Fatigue Syndrome patients than there is in healthy people, that would be evidence that there's an exaggerated signal coming from the vagus nerve into the brain.

There's a bunch of different ways that we can look for this and I can think of reasons why this particular method wouldn't work, but we thought we would try this first because it's sort of low-hanging fruit, and if it works, it might be useful in diagnosis down the road.

Yasmina:

Do you think that you might find ... Would you be able to see if there were previous infections? Is it possible, do you think, that the vagus nerve remains switched on in some way even though the infection has resolved?

Michael:

Well, that's very possible. One of the interesting things about these herpes viruses is that they go latent. All of us have herpes viruses in our body. More than 90 percent of human beings have more than one strain. Chicken pox, HSV-1, the simplex. We're all walking around with these viruses in our bodies, but most of the time, they're latent. People may have had the experience when they start to get a cold or a flu and they get a little cold sore on their tongue, that means when you're immuno compromised, these herpes viruses can come back out of latency.

One of the interesting things about these that comes from mouse research is that in a different cranial nerve, that's actually also a neuroimmune nerve, just like the vagus nerve, it's called the trigeminal nerve. When there are latent viruses in the trigeminal nerve, they continue to cause a low level cytokine response, even though the viruses are not active. Even though they're in latency, they still cause a cytokine response.

It could be the case that in Chronic Fatigue Syndrome, it's usually triggered by a period of intense stress or a sort of otherwise normal cold or flu and then it never really resolves. What could happen is that if someone has a latent herpes virus embedded in their vagus nerve, or for that matter, trigeminal nerve, and it becomes reactivated, like a cold sore, right on that nerve, it can start causing this signal, which would be the initial experience of Chronic Fatigue Syndrome's symptoms. But then it could even go back into latency and maintain that cytokine signaling that's enough to cause ongoing symptoms.

A lot of people notice that their symptoms can fluctuate, they might ... Patients call them crashes. For some reason, they've had a bad crash. And it may be the case, again this is just a hypothesis, that that represents herpes viruses going in and out of latency, causing an increased cytokine response.

So the answer is that if there's a previous infection that has gone latent, we think that that would still cause exaggerated signaling in a nerve that detects cytokines.

Yasmina:

Does your research indicate that this kind of infection is responsible for most cases of CFS? Or do you have any research on other causes?

Michael:

We don't have any direct evidence yet, but the hypothesis really is that any number of pathogens, as long as they cause an exaggerated signal, could cause this problem. For example, the Lyme bacteria is a bacteria that really likes to live in nerve tissue and if that were embedded in the vagus nerve or in one of the ... The vagus nerve has these little clusters throughout the trunk called the ganglia, or paranganglia, and if a Lyme bacteria were embedded in one of those paranganglia, it could cause this ongoing signalling.

The hypothesis really is ... Part of, I think, the strength of the hypothesis is that it explains one of the real conundrums in Chronic Fatigue Syndrome, which is that there are a whole bunch of pathogens that are associated with Chronic Fatigue Syndrome, but there's no pathogen that causes it every time. In other words, there's plenty of evidence linking herpes viruses to Chronic Fatigue Syndrome. Increased antibodies in people with Chronic Fatigue Syndrome, a history of severe herpes virus infection predicts Chronic Fatigue Syndrome. However, it's obviously not the case, since most of us have these viruses, that it always leads to Chronic Fatigue Syndrome.

The hypothesis really is that it's about the location more than the specific pathogen. This has to do with the fact that it's an innate immune response that generally responds to all pathogens.

Yasmina:

Let's say people are dealing with a latent or a chronic viral infection that there's really not much we can do about, such as these herpes viruses, is there any investigations that you're aware of into a way we could possibly switch off that signal in the vagus nerve that's unnecessary?

Michael:

Yeah, sure. One of the, again that comes from mouse research, one of the interesting findings is that some antivirals can reduce the cytokine signaling even in latent viruses. There's something about how antivirals work that can knock down the cytokine signaling. That's one way to get at it.

Another way to get at it is to just reduce the activation of these innate immune cells. Surrounding nerves and neurons are a type of cell called glial cells, G-L-I-A-L. The plural is glia, and there's a bunch of different kinds. These are essentially neuroimmune cells. They're kind of the immune cells of the nervous system. And just like other innate immune cells, like white blood cells, they detect pathogens, and when they do, they become activated. What happens is, if they were to detect a pathogen, they would activate and start producing all these substances that excite nerves. If they happen to be connected to the vagus nerve, they would excite that nerve.

One way that we could get at it is with trying to reduce the glial activation, and I think that's a reasonable avenue to pursue and research. There's some evidence, there's some preliminary studies that combination of antivirals and anti-inflammatories have been helpful. For example, in fibromyalgia, which I would argue is a similar process, just in a different type of nerve. There's some research coming out of Alabama that shows, for example, that combining those two things can help.

I think it's one of those things that's probably going to be A) really personalized because it matters what pathogen is at root. If one person, for example, has a herpes virus causing their problems, you're going to use a specific type of drug. If another person has a Lyme bacteria, theoretically, it could even be caused by an injury, that activates glial cells as well. Then you'd want to attack the inflammation, the inflammatory process as well. Vagus nerve stimulation is a neurotherapeutic technique where you can actually give electrical stimulation directly to the vagus nerve and that causes an anti-inflammatory cytokine response in the body.

I think these are all treatment options that are worth pursuing in research.

Yasmina:

How would one, and now the tricky questions, how would one go about investigating whether a vagus nerve infection is responsible for their CFS?

Michael:

Part of what my group is working on is to try and understand if we can even have a scan that allows us to see that. It's a tough question. As of right now, the average medical center hospital is not going to be able to do that. They wouldn't even know what to look for.

I think at this point, the evidence that it's a neurological condition with an immune component is pretty overwhelming. For example, there's a really important study by a Japanese group that used a specific type of PET scan where they looked for a protein that's produced by activated glia. The glia in the central nervous system, there's a couple of different kinds, but one of them, when they become activated, produce a certain protein called the translocator protein. There's a PET scan that can look for that, and this Japanese group found that individuals with Chronic Fatigue Syndrome had significantly increased levels of this translocator protein in their central nervous system.

Now that means that there's some sort of an inflammatory process happening. What we know is that when the vagus nerve detects cytokines in the body, it sends a signal to the brain, which then causes what we call a mirror response on the other side of the blood/brain barrier. Detection of cytokines in the blood of the periphery causes production of cytokines by these glial cells in the central nervous system. Part of that process is increasing this translocator protein.

It may be the case that as we gather evidence and get down to the specifics of the neuroimmune basis of Chronic Fatigue Syndrome, we'll be able to find specific types of scans and tests. That's the hope, because patients struggle with doctors that are skeptical. Right now, there's not really a commonly used objective test for Chronic Fatigue Syndrome. I would argue that it's incorrect to say that there are no objective tests, but what we would like to see is a battery of tests that can really say, "Okay, this person actually has this condition." Because right now, it's basically people going to their doctor, describing their symptoms and then their doctor does a diagnosis of exclusion. They test for Lyme, they test for sleep apnea, they test for all these different, multiple sclerosis, all these different conditions that could be causing similar symptoms. If they don't have these other diseases, they say, "Well, we'll just call it Chronic Disease Syndrome." Patients deal with a lot of skepticism from family members or from doctors who don't follow the literature.

Yasmina:

Indeed, they do. Okay. Basically, for treatment options, doctors or institutions to look to, "watch this space", I guess.

Michael:

Unfortunately, it's tough for patients because there's not really a lot of good treatment options right now. The standard is to get therapy that will help you cope, and of course, that's not getting at root causes. Some people take, there's this sort of a ... In the UK, that's taken a step further where there's a powerful group of doctors there that really consider it to be a psychological condition, and so their version of therapy is to try to convince the patients that they're not actually sick. It's obviously really degrading and frustrating for patients.

But in terms of treatment options, unfortunately, the best advice I could give is for really patients to talk amongst themselves and find open-minded, good doctors that are willing to follow the literature and try new options. If you're seeing a doctor that considers it to be a psychological condition, then fire them and find someone else.

Yasmina:

Excellent advice. In the meantime, is there anything you can advise, anything that people can do on their own or with their doctor, or is there any advice that you could give to any practitioners that might be listening? I know there's quite a few doctors out there who read my blog, which is nice to hear.

Michael:

Yeah, I think individual medicine is going to be important for Chronic Fatigue Syndrome. My personal opinion, and I think there's an argument to be made against it, but my personal opinion is that it's not the case that there's some mystery virus out there that we just haven't found yet and that's going to explain every case of Chronic Fatigue Syndrome and we just have to find that one virus that's really the magic bullet. I'm skeptical of that narrative. I think that it's probably an autoinflammatory condition, as opposed to autoimmune condition, that can be triggered by any number of pathogens and might be maintained by a pathogen and might be maintained by ongoing inflammatory processes in people that are prone to that.

For patients and clinicians, I would argue that they should think in personalized terms and look is there evidence in this particular patient for one particular pathogen? For example, a good friend of mine had really severe chicken pox later in life than usually happens, into her 20's, a pretty severe case. That, to me, is some evidence that maybe it's the zoster virus, maybe it's the chicken pox virus that could be at the root of that person's Chronic Fatigue Syndrome. You could do blood tests for antibodies to see if they're elevated. There's a really good research group out in Stanford that's done some small clinical trials and found that elevated antibodies of certain virus strains predict patient response to specific antivirals. If there's evidence that there's an ongoing viral response in these patients, then there may be a specific antiviral that they should try.

What I wouldn't suggest is to just through antivirals at everyone who presents with these types of symptoms. I think there ought to be some evidence, because you don't want to end up doing more harm than good. If someone's got a herpes virus and they're taking some sort of an antiretroviral or some drug that's not really designed for that specific virus, they really could do more harm than good.

Personalized medicine is key. Of course, there's the standard advice of watch your activity levels, be wary, but these are the sorts of things that patients have figured out on their own. They already know. In general, just watch your activity level, be careful of those sorts of things, watch what you can handle, because post-exertion malaise is really tough.

In general, there's a tough tension between post-exertional malaise, which is increased symptoms after exertion, and deconditioning. I want to make clear that I don't think deconditioning is the cause of this condition, but it's not healthy and so-

Yasmina:

Sorry, by deconditioning you mean?

Michael:

Lack of activity can actually cause muscle atrophy. Every time someone exercises, their muscles actually produce cytokines. One of the things that happens is if someone has been on bed rest for a long period of time, the same amount of activity will cause an increased cytokine response, certain specific inflammatory cytokines.

You want to try to find that balance of the level of activity that won't completely wipe you out, but at the same time, try to not be at rest more than you need to be. If you can, don't lie flat too often. This is for the very severe folks. If you can get someone to prop a couple of red bricks under the bed posts so that you're tilted a little bit with your head up. What happens if you lie flat for a long period of time is that you're blood pressure can start to drop, you'll start to convert blood into urine, and POTS tachycardia, postural tachycardia is a concern among people with severe Chronic Fatigue Syndrome and so tilting themselves during bed rest can be something that helps a little bit with that. The sorts of things that help would be tight socks and leggings and things like that, to try and prevent blood from pooling in your legs when you sit up.

Of course, these are not cures, but they're changes that can help manage the symptoms and help prevent them from getting worse.

Yasmina:

Okay, that's great advice. Thank you very much.

I know in my case, it was a very long journey coming back from my year of unintentional bed rest, but I had to start exercising five minutes at a time. There was a time when I couldn't even walk up to two or three stairs without being winded and collapsing onto the sofa with the blood drained out of me. There's actually an app I found recently that, I don't know, it measures heart rate so it's probably not relevant here, but it tells you whether your body is too exhausted to exercise again.

Michael:

Hm. Interesting. Well, I don't know anything about that specific app, but I will say that part of the vagus nerve, it innervates all of the trunk organs, and that includes the heart. When the vagus nerve that comes from the brain to the organs is called the motor vagus or the efferent vagus, and that actually does control heart rate and that's one of the main ways that we can measure vagal tone is what's called heart rate variability and it's the difference in heart rate between breaths. That's very much a vagus nerve thing, which I think is also part of the reason that I think that the vagus nerve is involved in this condition is because there's all these autonomic symptoms.

There's a level of severity where you shouldn't get up and walk three stairs. You really have to be careful and find that balance, but I guess just do what you can to find it.

Yasmina:

Absolutely. And HRV, that's what that app measures. That was, you reminded me, thank you.

[You can read my post on exercise induced fatigue where I mention the app here.](#)

Michael:

Yep. Oh, yeah. That actually is one of the main measures of vagal tone.

I would predict that folks with Chronic Fatigue Syndrome, and there's evidence for this, are going to find a different heart rate variability than their healthy friends and relatives.

Yasmina:

You mention the sickness response in your paper, what happens when the body goes through sickness and all of the different symptoms. Would that behavior, the symptoms of which are consistent with a typical mast cell activation event, is there ... Basically, I guess, what I'm asking is do you see any link? You mentioned POTS. POTS and mast cell activation and EDS are kind of the trifecta that so many of us seem to come up with time and time again. I, myself, had very, very severe POTS symptoms for many years, which have only recently abated, but do you see any kind of link? Because we definitely have the CFS symptoms, but again, you said there are many different aspects to CFS.

Michael:

Yes. One of the morphological, one of the structural factors about the vagus nerve sort of makes sense, which is that it particularly innervates areas of the body that come in contact with the outside world. The esophagus, the lining of the stomach, the lungs, all the areas where we breathe in or swallow pathogens. There's another type of cell that really is found in those areas, and that's mast cells.

The crosstalk between the glial cells that surround the vagus nerve and mast cells is profound and it's important. An activated mast cell actually produces several mediators that will activate the vagus nerve. Those include proinflammatory cytokines, all the interleukins, one through six, tumor necrosis factor alpha, which is another proinflammatory cytokine, prostaglandin, which is related to pain, muscle and joint pain, ATP and nitric oxide. There's all these

substances that are produced by mast cells that will activate other immune cells, other innate immune cells, including glial cells and will also directly activate the vagus nerve.

These innate immune cells have a lot of cross-talk and it can become a snowball and that's a new classification of disease that I've alluded to is autoinflammatory and that's not the same thing as autoimmune, which is when your body attacks its own tissue. Autoinflammatory is when there's an ongoing inflammatory process in the absence of evidence for a pathogen that would be causing it.

There's, I think, evidence that there can be a snowballing effect among immune cells that can grow out of control. There's a lot of cross-talk.

Yasmina:

Okay, so if I don't have a virus triggering my vagus nerve, if I do just generally have a virus that is triggering my mast cells but not located in the nerves, that virus could still indirectly trigger the vagus nerve response?

Michael:

Definitely. The vagus nerve detects a circulating of immune molecules and that doesn't have to be produced directly by glial cells that surround the vagus nerve, it can be produced by white blood cells, mast cells.

Let me give you a little background into the innate immune system so maybe it makes a little more sense.

There's two divisions to the immune system. There's the acquired and the innate. The acquired is the antibodies, so it's called acquired because we build it as we experience life. When we get sick with something, we make an antibody so the next time we get sick with it, we'll be able to fight it off better. That's the reason that kids get sick so easily.

But then there's the innate immune system, which is more evolutionarily ancient and it's really evolved to handle anything. Instead of antibodies, which are very specific for an individual pathogen, the innate immune system is evolved to help us fight off pretty much anything we'd come in contact with. That's parasites, viruses, bacteria, injury, and it's got these general responses. Low grade fever, fatigue, muscle soreness. These are all things that prevent, for one thing, there are things that preserve energy so that we're not out there running and dancing and procreating when we should be fighting off an infection. Like, for example, low grade fever, most of the pathogens that we come in contact with have evolved to really like 98.6 degrees for replication and so the brain says, "Well, if I can bump it up to 101, it's going to be harder for those things to reproduce."

Yasmina:

Ah.

Michael:

Any time that we are sick with anything at all, we get this innate immune response. In Chronic Fatigue Syndrome, I would argue that it's this innate immune response with the volume turned up to 11. It's just extraordinarily severe. That's part of the reason that I think the vagus nerve is directly involved. It's evolved to detect a small amount of circulating immune molecules and if it's directly bombarding the vagus nerve, the hypothesis is that it would really give an exaggerated signal.

To come back to your question, it doesn't really matter what type of innate immune cell finds a pathogen. They all have these things called PAMP detectors, so pathogen associated molecular patterns. Even mast cells have these receptors that basically look for things that look kind of like a virus or look kind of like a bacteria and they become activated when they discover something that seems sort of foreign. They start pumping out these immune modulators, which then are detected by the vagus nerve and cause a sickness response.

It really doesn't matter where or what type of cell, you're going to get a vagus nerve response. But the difference between like, for example, if I were to catch the flu and my good friend with very severe Chronic Fatigue Syndrome, it's just a whole different level of severity, which I think is why the vagus nerve might be directly involved.

Yasmina:

Okay, that's great. Thank you very much for joining me here today, Dr. Michael Van ElZakker joining me today for an interview. That was wonderful, thank you very much. And hope to hear more from you very soon.

Michael:

I appreciate it. Thanks for having me on.

It's finally here! [Man Food](#) – a high nutrient antihistamine and anti-inflammatory ingredient filled book geared towards guys, women who love to work out, yoga like they mean it, or just load up on healing nutrients. Features my personal shopping list of antihistamine and anti-inflammatory foods.

The [Anti-cookbook](#) and all liquid [Anti-Detox Book](#), don't treat any conditions, but feature a plethora of the high nutrient antihistamine and anti-inflammatory ingredients that have been instrumental in helping me feed myself on a limited diet. The Anti-cookbook features a six page list of antihistamine and anti-inflammatory foods and comes in regular and Paleo.

The [Low Oxalate Cookbook](#) features antihistamine and anti-inflammatory rich recipes.

Don't miss the [Low Histamine Beauty Survival Guide](#) for non-toxic beauty tips, the skinny on histamine releasing (mast cell degranulating) beauty ingredients, antihistamine and anti-inflammatory beauty alternatives and the top brands natural brands I've found.

[Take a peek at my other low histamine and antihistamine cookbooks](#) for more high nutrient recipes and sign up to my mailing list for freebies.

« [Are you allergic to Candida?](#)
[Christmas Menu 2015](#) »

54 Comments **Healing Histamine**

 Login ▾

 Recommend 4  Share

Sort by Best ▾



Join the discussion...



Jacinthe Lemay • a year ago

The first cervical vertebrate may be the cause of the irritation of the vagus nerve if it's misaligned! It was m'y case ans I feel much better since it was aligned in RPG (Rééducation Posturale Globale) in physical therapy!

4 ^ | ▾ • Reply • Share ›



jeff swanson → Jacinthe Lemay • 8 months ago

Joint mobilization and manipulation have their places, but they won't change chronic inflammation (local or systemic) or alter a joint (any bony junction encased in a synovial membrane) for more than a few seconds.

Consider a person performing introductory yoga is putting pressures on their joints and experiencing ranges beyond grade 4 mobilizations.

^ | ▾ • Reply • Share ›



healinghistamine Mod → Jacinthe Lemay • a year ago

Thank you for sharing.

^ | ▾ • Reply • Share ›



Darla Bruno → Jacinthe Lemay • a year ago

I got an adjustment today. Thank you for providing this info!

^ | ▾ • Reply • Share ›



Kim O. • a year ago

Yes, yes, yes!! I have been sick for years and keep revisiting the vagus nerve connection...keep telling docs but of course only chiros will take this seriously in my experience. I have reoccurring symptoms of all of the herpes viruses that I have had, most notably herpes zoster, with intermitten trigeminal nerve pain with often coincides with a cold sore on my lip or nose on that side. In the Fall of the year everything starts to get worse. I have had bouts of nerve pain in other areas that resembles my first bout with herpes zoster....I feel like herpes viruses rule my life! Some of my current symptoms are that I have cold and heat intolerance, tachychardia and breathlessness after eating, those weird body chills or zaps, fatigue that is much improved lately....I was taking lysine to ward off a cold sore and noticed my fatigue was better, so I begun taking small doses off and on and am definitely feeling better. I have been diagnosed with lyme but feel like it is more of a symptom than a cause of my issues....I am 44, thin, eat well....physically fit before all of this...

I definitely think you are onto something....keep up the good work and I will be following the progress on this research!

3 ^ | ▾ • Reply • Share ›



Laurie → Kim O. • a year ago

Lyme is not a symptom..it's a disease.

1 ^ | ▾ • Reply • Share ›



Kim O. → Laurie • a year ago

Of course. I was referring to the state of the body allowing the symptoms of these otherwise latent diseases and viruses to rear their ugly head...sorry if that was not clear. Many, many people carry lyme antibodies and yet are asymptomatic, Others are not so fortunate.

^ | ▾ • Reply • Share ›



sustainablechoices → Kim O. • 6 months ago

We could be twins. Me too.

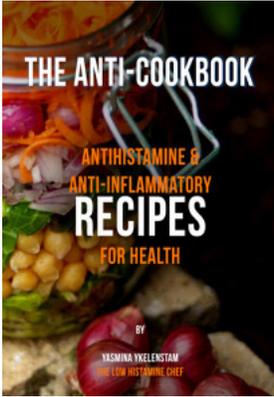
^ | ▾ • Reply • Share ›



leanora • 7 months ago

i have personally healed from PTSD, chronic fatigue, herpes outbreaks, chicken pox which eat off neuropalria (face, jaw, optic nerve) which I

MY FAVOURITE COOKBOOK



NEW EBOOK!



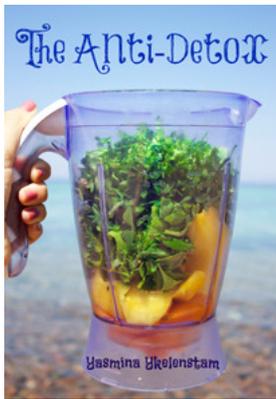
Join Us!

Error: Not a valid Facebook Page url.

Histamine Safe Probiotics



All liquid Anti-Detox



Archives

Archives ▾

Categories

Categories ▾

- [Affiliate Disclosure](#)
- [Medical Disclaimer](#)
- [Privacy Policy](#)
- [Terms & Conditions](#)

© 2016 THE LOW HISTAMINE CHEF