Pain2Brain
CHIROPRACTIC NEUROSCIENCE
SUMMIT

Dr. Christine Schaffner

The Hidden Cause of Neurodegeneration

Marcus Chacos00:14
Welcome to the Neuroscience of Chiropractic. It's incredibly exciting to have with us Dr. Christine Schaffner, you are in for a treat on what we really need to know and understand around the hidden causes of neurodegeneration. Some background with Dr. Christine that I think you'll find incredibly valuable with the insight that she's going to bring to this presentation. Growing up in a family of healthcare practitioners after graduating from ?? as a Board Certified naturopathic doctor, Dr. Christine made her mark in a powerful and unique way focusing on biological medicine, which is an incredible way to alter the direction of many not just patients but practitioner's focus on care. This is a solely under-explored modality that supports a patient's own innate ability to heal, rather than interrupting their physiology with medication and other prescriptive or symptom-based protocols. With her wide adverse skill sets, Dr. Christine combines both naturopathic functional and conventional therapies to develop individualized treatment plans, focusing on the underlying cause of complex chronic disease, including Lyme disease, autoimmunity, sleep issues and neurological illnesses, which again, we're going to address and look at today, as well as so many other health challenges and hurdles that people face. Patients who visit Dr. Christine or any of her world famous colleagues that she has helped create, typically have seen dozens of doctors and practitioners in the past, are frustrated or disillusion. Likewise, other practitioners have come to see her after years of frustration, hoping to observe and learn her incredible, unique and powerful approach, addressing patients complex health concerns and creating and successful journey which inspires their own body to open up towards self-healing and self regulating mechanisms. And I think that's why I'm so excited to have Dr. Christine, because the authority that she comes with the capacity, impact and create breakthrough is truly amazing in the approach that she has. The podcast, The Spectrum of Health with Dr. Christine has an international audience and dedicated followers. She's a sought after speaker on many world class summits, Dr. Christine, welcome. It's an honor, a pleasure to have you present.

Christine Schaffner 02:28
Thank you for the introduction. And of course, thank you for the invitation. It's really an honor to be here.

Marcus Chacos02:34
Well, I'm very honored to have you here. And I think this is such an important topic, the hidden causes of neuro degeneration. We see it in practice, but there are factors that we need to bring to the surface to know and understand and I know this is going to be invaluable to the audience today. So I'm gonna ask you to jump straight into that presentation. And we'll have some q&a at the end. So stay for that. Let's go.

Christine Schaffner 02:57
All right, so I will get started here. And so I was asked to speak on the hidden causes of neuro degeneration. And this is really a passion of mine, and really the focus of my practice. And so I am going to walk us through what we're going to be talking about today. So I'm going to just set up the framework about bio-regulatory medicine. So you can understand the framework where I look at any patient really, and of course, a patient who's struggling with neurological illness, I'm going to have a brief conversation around neuro-inflammation, which is really the hallmark, I think, of neuro-degeneration and some of the underlying causes of how they trigger inflammation. We're going to be talking about the glymphatic system, I think that's still a very overlooked and underappreciated system about how the brain detoxifies, and I think it's a key and foundational to any treatment strategies to recover the brain. And then we'll look at infections and toxic that trigger neuro inflammation, the benefits of melatonin and then just when we start thinking about treatments and therapies, we'll be talking about, like, kind of coined this eco approach of how I approach a treatment plan. So we'll dive in. So many of you may have already heard of this idea of biological medicine or bio-regulatory medicine. And so I just wanted to, you know, share, and Marcus already alluded, but I am coming to this from the perspective, I'm a naturopathic physician. I'm also trained in bio-regulatory medicine. And the hallmark of that is that the body is always trying to self regulate and heal. And when there's disease in the body, there are obstacles to that self-regulatory capacity, and how do we remove those roadblocks, so the body can do what it innately knows how to do and so I like to think about is health is regulation, health is resilience. I've also said health is coherence. And so how do we, you know, how do we support our patients and identify all the things that we're going to go through that could be leading to them to an illness like neuro degeneration. So again, taking a different approach, a different kind of framework, you know, of bio-regulatory medicine is this idea of terrain theory. So terrain is the idea, so we have germ theory, and then we have terrain theory. And you know, and you know, as we're recording this, we're all very well aware, I think with the current climate of, you know, this idea of just looking at one bug versus understanding about that, really, you know, when people get sick, it's not just about the pathogen, but it's the

pathogens interaction with that body's individual terrain. And so, Louis Pasture was said to say on his deathbed, the terrain is everything, and he's the father of modern germ theory. And so our terrain is our internal environment. And it's a combination of our nutritional status, our toxicity levels, our energetic balance, also a mental, emotional, spiritual outlook. And again, it's that thing that I think that we can feel so empowered to optimize and to heal, and that will lead us to health, no matter what stress comes our way.

Christine Schaffner 06:02
And as I talk about the role of the terrain, I also acknowledged the roles of what we would call stealth pathogens, and neurodegenerative diseases, which we're going to be talking about. But I also want to talk about that in the backdrop of our microbiome, and our ecosystem. So we are more microbes and human cells on the human body. And so when we think about our individual ecosystem, we have this microbial balance of bacteria, fungi, protozoa, viruses, and we have, you know, basically a symbiotic and pathogenic microbiota that coexist in the body. And, you know, we're the more we dive into microbiome medicine, we know that we have a microbiome in the gut. But we have a microbiome in manynd, a I think probably all systems in the body, we have a microbiome in our skin, our lung, our nasal passages. And, you know, our brain actually has a microbiome and the oral microbiome is so key to our health or systemically, as well as there's also been shown, you know, a microbiome in breast tissue, especially when people are going through breast cancer, how there can be altered changes, and they're getting breast microbiome. So and then kind of looking at this and under backdrop of terrain. So a toxic terrain can lead to pathogenic microbiota overgrowing and becoming more virulent, and leading to dysbiosis and disease. Also, that pathogenic microbiota can make us absorb and assimilate toxicity more easily, as well as that dysbiotic microbiome can also produce metabolites from toxins that can be more detrimental. So it's really not only this balance of microbes, but what I'm really passionate about is how our environment and all these environmental factors can make us more vulnerable to these pathogens. So we know we have a microbiome, we also have a virome, the human body consists of over 380 trillion cells, viruses, rather than just his own. I don't even know how to comprehend the number, but it's a big number. And it's, um, you know, the viruses have a role that they not, you know, that we coexist often in harmony, you know, obviously, there's certain viruses, when our body can be stressed, and when they can become activated. They can even create symptoms and pathology in the body. But they do have a evolutionary role. And they do help us to regulate what we call the microbiota. So they have kind of a regulatory function. We also have a micobiome. So that's the fungal microbiome it's smaller than the microbiome and the viral but it is indicated and especially in the gut, the microbiome, when it's out of balance, it can be out of balance, especially in inflammatory bowel diseases, Crohn's, colitis, and so forth. And then again, I mentioned and what we'll walk through a lot today is the big idea of stealth pathogens and any pathogenic microorganism employing strategies to persist in the body by hiding, evading, misdirecting, or even suppressing the

immune system that leads to chronic disease or lack of well being. And I looked at that, that's really a relationship. Why do stealth pathogens take hold? Or do they have the ability to evade the immune system and I think that's in the backdrop of the toxic terrain. So again, just driving the point home that we've had this increase in environmental toxicants over the years, and we're, you know, from my perspective, in the US, we have water pollution we have flouridetoxicity we have increased in in electrosmog, glyphosate which is the active ingredient in Roundup, pesticides, heavy metals, vaccines, I'm going to go through in a portion of this talk around, we're going to talk specifically about glyphosate, aluminum MEMS. So again, just setting up the framework for bio regulatory medicine and how we approach disease and how we approach Approach every patient and we look at the terrain, we look at the microbiomes and the ecosystem and toxicity in the body. And then often a patient comes to me and what prevents them from healing and one of the roadblocks to the really soft regulatory capacity is what we call a focal infection and a focal infection can be a source of

Christine Schaffner 10:22
infection that is often chronic, persistent and hidden from the immune system that the immune system cannot clear. So it could be like a root canal, or a chronic tonsil interfering with vocal infection, or tonsils that have had a lot of strep, epsteinbarr that, you know, haven't healed completely and can be a reservoir for bugs and create stagnation in the system. And so, there is, you know, there are some definitions I present here about a dominant focus can generate pathogenic microbes that continuously spread the the blood and lymphatic system as well as along the nerve fibers. So these highways in the body that these pathogens can continually propagate and create, you know, systemic symptoms. Again, this idea of axonal transport, and that's how, you know, these pathogens or toxins can travel around neurons and kind of essentially, get into the ganglia, get into cranial nerves and enter the CNS, I talked about the teeth and the tonsils being common focal infections, but also other ones can be the sinuses. And then this is a kind of a key point where they can be dormant until they're triggered. So bacteria that have the later side, potentially in the mouth or the tonsils or other focal infections, they might be low virulence and then under stress, trauma or toxicity, then they become more virulent and pathogenic, and then they can migrate to other parts of the body in great symptoms. Again, you know, this idea, again, I set a focal infection, focus or an interference field are synonyms. And again, we look a lot out what possible interference fields are blocking the body's ability to self regulate and heal. And that can be scars, that can be teeth, that can be the tonsils. This picture here shows a C section scar, and so this woman is having impaired circulation in her lower extremities. And the C section scar is a block to circulatory circulation and drainage in the legs. And so, when we think about C section scars or any scar for that matter, they can impair lymphatic drainage circulation, they can hold emotional trauma, we do technical neural therapy to help unblock the stagnation and emotional trauma in that area and to improve circulation and drainage and help with symptoms. But again, there are other ways to

get there. But this is kind of, again, when we think about neurological health, brain health, we want to think about what possible focal infections or interference fields can be a source of infection or preventing the body from healing. I mentioned already the mouth, I do a thorough dental history for every patients and screen for amalgam fillings and screening for root canals, and then wisdom tooth cavitation. So this is a woman who had several root canals, she also has cavitations, there's the dental meridian connection, also the teeth develop from the same tissue as the brain embryologically. So there's that connection as well. And then when you think about it, if you have a source of toxicity from a root canal, so bacteria or you know, some root canals are stuffed with mercury, that can be draining into the lymphatics that can have, there can be axonal transport from the the nerves in the mouth, that get taken into the cranial nerves that can get taken to the brain. Also, it can be affecting the lymphatic system, the circulatory system, and, you know, create systemic effects.

Christine Schaffner 13:57
I mentioned trauma, I do think trauma is, when we think of the bio-regulatory framework, not only do we think about interference fields, but we have to acknowledge trauma, many of our chronically ill patients can have an earlier trauma that made them vulnerable to being sick. I think there's also the trauma of being sick, that we have to acknowledge as well. So, you know, I just wrote unprocessed trauma can be at the root of an imbalanced physiology and have similar effects as a toxic inner stealth pathogen. I see that inner relationship. And then Peter Levine is a wonderful PhD who has somatic experiencing, and he does a lot of work on trauma work. So trauma can affect the vagus nerve, they can get us in freeze mode, you can affect the limbic system and create this PTSD for people. And trauma can affect the heart and brain communication. And when we have, you know, one of the things that I've been really excited to learn that there's something called heart brain coherence. So when the heart is in a coherent rhythm, especially that happens when we are in states of gratitude, positive affect, our heart actually responds to that by creating a more coherent rhythm and also a stronger field generating from the heart. And that heart field is as strong as electromagnetic energy generated from the heart. And that actually informs and instructs our brain. So there's this heart brain connection, when we think about healing the brain. Trauma can also be stored in the fascia and extracellular matrix. And then of course, it can suppress the immune system. So that's just kind of setting the stage of Okay, this is bio-regulatory medicine. This is kind of how we approach illness. This is how we approach each patient. And then I'm going to kind of dive into some of the hidden causes that I see that trigger neurodegeneration or even you know, neurodegeneration is on one spectrum, but there's a lot of steps to get there, usually, before we get to that state. So when people have symptoms of cognitive impairment or neurological symptoms, there's some common denominators and of course, we want to turn it around before it gets to the degenerative point, but we can still treat degeneration of course, as well. So um, you know, I'm from the proponent that infections can trigger neurological illnesses and so, we

know that they can be at the root of neuro-inflammation, prolonged neuro-inflammation leading to neurodegeneration. So, you know, there can be these, you know, chronic infections can create immune reactions, and also the microbes can excrete excitotoxins, or EXO toxins and metabolic wastes that are neurotoxic. And then they can, the pathogens can outcompete the healthy cells for micronutrients. And then this is the definition I like to ascribe to for neuro-inflammation and the inflammation of the nervous tissue. So the nerves and also the CNS, may be initiated in response to a variety of cues, including infection, traumatic brain injury, I'm sure you're talking about that. Toxic metabolites, or autoimmunity. And then again, this is kind of, you know, neuro-inflammation is complex, of course, but I just wanted to presence the idea of microglial activation. And so, you know, the microglia are very important to keeping the brain healthy. And, you know, disease usually happens when there is prolonged inflammation, rather than these short bursts of inflammation, the stressor gets addressed, the body gets cleaned up, and then returns to normal, but when there are these prolonged states of inflammation, because the stressors are persistent, that's when we see, you know, poor health, and that's what, you know, microglial activation can lead to So, you know, again, you know, the microglia are there to protect us, but when they are constantly under attack, under stress, they can actually do more harm than good and lead to neuro-inflammation.

Christine Schaffner 18:08
So again, just thinking about, okay, so what is, you know, so neuro-inflammation is something that we need to look at. And that is going to be, you know, an underlying factor to neurodegeneration that we know that microglial activation is at the root of neuro-inflammation and triggers. And triggers can be things like pathogens, and then I wanted to just talk about when we think about neuro-inflammation or brain health in general, we have to acknowledge the role of the glymphatic system and the glymphatic system is one of the most amazing systems and the thing that I'm very passionate about sharing. It was newly discovered in 2015 around and it's the lymph system in the brain. So the glial cells are, you know, helpful for the flow of lymphs, that bathes our brain at night. So we have to be in a state of sleep, our brain shrinks 60% in size, to make room for the flow of lymphs, to essentially bathe our neurons and remove waste. And so here's the visual that the length is, you know, flowing along the arteries. These astrocytes are glial cells, and then these astrocytes have these enfeet with aquaporin channels, they regulate the water flow that bathes the neurons and you can see these these little rod-shaped things are, you know, metabolic waste and then they get cleared along the venous system. And here this is after. We know that people who have traumatic brain injuries are more susceptible to damage, regeneration, cognitive decline, and one of the mechanisms is an injury to the glymphatic system. And so this is after injury, and you can see that the astrocytes are disorganized and then there is a buildup of metabolic waste, and amyloid beta can increase, you know, in this space and then that can, again lead to neurodegeneration. And so then there's just a buildup of waste, and that, again leads to cell death eventually. And then, you know, that is what we want to prevent.

Christine Schaffner 20:21
Moving along here, so that that flow of lymphs, you know, the lymphatic system, I don't go into the whole lymphatic system here, but the lymphatic system is this whole, you know, body wide network of vessels, nodes, organs, and it's a waste clearance and immune surveillance system, right. And so it's a body wide network, but it's interconnected. And because it doesn't have its own pump, it's really reliant on movement. And, you know, good flow in the body. So if we want the brain to drain well, we have to also have a downstream exit route for that, when there's congestion in distal areas that can create backup and then the lymph doesn't drain as well. There's one congestion and that can lead to neurodegeneration. So one of the tissues that's really important for the health of the brain is Waldeyer's Ring. This is a ring of lymphatic tissue. There's the adenoids, the tubal tonsils, the Palatine tonsils, the lingual tonsils, that whole ring on the lymphs actually has to leave the brain, travel the cribriform plate in and around, you know, Waldeyer's Ring and so that's an important area that we want to keep healthy. And this can be an area that will determine I would say it could be an interference or a focal infection in a lot of our patients and so, again, just reiterating you know the lymphatics have been drained the brain the sinuses eyes skull have to go through Waldeyer's Ring, right. And if there is an interference field there that can affect the cervical ganglia. There could be also scar tissue within tonsillectomy and then that can affect the circulation to the pineal gland. And then that can create potentially poor sleep if there is scarring or disruption because of blood flow to the not only the brain but also the pineal gland can result in lower amounts of melatonin and so forth. So it's in that vicious cycle of decreased melatonin, decreased sleep, decreased activity of the glymphatic system. So the tonsils are a big area that we look at. Again, looking at downstream from there we want to make sure that the cervical lymph nodes are not congested, if they're congested, inflamed, infected that can also create pulling in not been there can be less drainage out of the brain. And so this is just showing that when the deep cervical nodes are either inflamed or infected because of inflammation or infection in those areas they become congested or clogged, and then that can affect drainage stream. And then also the infections that can be affecting the cervical lymph nodes can also be affecting the vagus nerve because of the proximity. I have a slide for that. So Dr. Ruggiero and the late Dr. Bradstreet looked at the brains of children with autism and found pooling of lymph in their brain. And then when they decongested the cervical lymph nodes, they found less lymph in the brain and more improvement in symptoms. And so this is just reminding us that they were the people who shared that with me that I have really been anything good. We're so onto something. And this is seemingly simple but so foundational to recovering the brain. Again, the vagus nerve has gotten so much press lately, which is awesome, right? It's the 10th cranial nerve, it regulates our digestion our breathing our heart rate. And if we have impaired lung drainage in the neck that actually can affect the vagus nerve and then that can affect our neurology because of the bi-directional communication between the body and the brain via the vagus nerve. And so Dr. Michael VanElzakker, he is out of Stanford, I believe and he has this vagus nerve infection

hypothesis, which is interesting to me and that basically, he's saying that there's infection around the nerve that creates glial cells are bombarded, there's pro-inflammatory cytokines, there's inflammation, and then that can lead to vagus nerve dysfunction. So this idea of vagus nerve infection, so kind of putting this here just to know that, you know, not only opening and decongesting the cervical lymph nodes is important for the glymphatic system and healthy brain, but also it's really important for the vagus nerve as well, which is of course a cranial nerve so it's connected to the brain.

Christine Schaffner 24:54
And when we think about the brain, we can't forget the sinuses. The sinuses can be often another focal infection. When we think about this cross section here we see the sinuses and the proximity to the sphenoid sinus and the proximity to the pituitary. So it is important connection and we want to make sure the sinuses are healthy to have a healthy brain. And we've shown you know through things like MARCoNS, which is this multiple antibiotic resistant coagulase negative staphylococci that how often mold and Lyme patients have that produces biotoxin that can affect the pituitary. And then that can lead to things like low antidiuretic hormone or low regulatory peptides like MSH. So really making sure that we have the healthy balance of microbes in the sinuses and is important for brain health. Dr. Dale Bredesen, even types that he has these different categories of Alzheimer's. And he says that type three's inhalational Alzheimer's, and it's related to this new chronic inflammatory response syndrome, from people who have been affected by mold, and who have potentially this mold comes in their nose as well. So the dysbiosis in the sinuses that produces biotoxins can affect our brain. And then another, you know, another kind of window into how sinuses can be a focal infection, it's affecting the brain and creating neuro-inflammation. We see a lot of children and even adults with pans or pandas. And so that's a mechanism where staph or rather strapped, it can be stabbed, it's more strapped, and epsteinbarr and you know, other infections can lead to neuro inflammation. And then this is an article that shows how we're base strapped in the tonsils and sinuses basically, can make their way via the cribriform plate to the brain. And so the it's really the, the th 17 cells can cross the blood brain barrier, be the cribriform plate and then that leads to the microglial activation. So if you having raging or silent, because the system can engage infection, the sinuses are in the tonsils back in the entryway to the brain to keep that stress and then inflammation in constant. And then a lot of it's kind of heartbreaking because the presentation for a lot of these symptoms are more neuro psychiatric. So, you know it can be these really extreme mental emotional states that people can be when they're suffering from things like this. And this is just kind of a picture from the article of showing the strep and how that can kind of get into the brain and create microglial activation. And I mentioned pediatric acute onset, very narrow psychiatric syndrome. So that mechanism is often used to describe pain. So it's this neuro inflammatory encephalitis. And it can be again, it can be the strep, but it also can be mycoplasma, influenza, HHV6, HSV, one and two, Parvo coxsackievirus, Lyme

disease, epsteinbarr, so a whole host of infections can be in this area that can be keeping the brain inflamed, and then again, sharing, you know, there's a whole host of neurological manifestations that present as mental emotional symptoms like OCD, even anorexia, anxiety, tics, and then cognitive impairment.

Christine Schaffner 28:44
So kind of, again, talking about even some in this realm of talking about potentially infections that can be you know, hidden sources of neurodegeneration. And, you know, when we look at the brain in Alzheimer's patients, there's some hallmarks, right? There's amyloid plaques, that can be this amyloid beta that comes together and forms plaques so that glymphomatic system isn't working well then the you know, amyloid beta can build up in the brain and can be forming clumps and plaques that then interfere with a person's ability to communicate. And then these tangles can form an abnormal accumulation of tau protein in the neuron and the makin black transporter. And things that help and communication the synapse. And so those are kind of Hallmark signs, and then of course, loss of volume. So there's a decrease in brain volume. And then this was always really insightful to me amyloid data is an antimicrobial peptides. So we know that when there's more amyloid beta, and there's plaques in the brain that can lead to neurodegeneration. But why is that there to begin with ?So is it because there's an impaired glymphatic system? Yes, but why is there also the presence of amyloid beta in excess and that can be because there is potentially pathogen or infection in the brain that the body's attempted to be clear. And so this is just a paper showing them how it is an antimicrobial peptide. And then it shows, you know that the work of Dr. Moyer and Tansy, you know, shows that they actually looked at like what is in the plaque. And it's viruses. So viruses. So there is this idea that there are environmental triggers for amyloid beta. And that just removing the amyloid beta and the plaque alone doesn't cure Alzheimer's, but we have to look at root cause, which is the neuro-inflammation, which leads to viral presence in the brain. Again, it's multifactorial, but I believe that that's a big clue. And then this is the viral hypothesis of Alzheimer's. You know, how, and, you know, basically viruses can kickstart an immune response that might increase the accumulation of amyloid plaques. And then, yeah, this is kind of just showing all of that data that you can go a little bit more deeply in. I just want to acknowledge the role of retroviruses The more you read about retroviruses, the more I do think that they are part of the neuro-inflammation in most there, you know, there's exogenous retroviruses and then there's endogenous retroviruses. So there's these group of HRV, and they're actually about five to 8% of our human genomes. They're part of us. But, you know, why do they become active and create inflammation that can be multifactorial, but when these are activated. So retrovirus works via an enzyme reverse transcriptase. Once you find yourself using the enzyme to force the cell to create viral DNA, this viral DNA then becomes integrated into the host cell DNA. So it's a way to kind of incorporate more viral DNA into our genome. And that can create more inflammation, oxidative stress, and so forth. And then this is a paper showing that this is just nomenclature for

human endogenous retroviruses, their WRK, that they can be a driver for neurological illnesses like MS, ALS, and so forth. Um, again, a lot more information around mold these days and mold can absolutely be the underlying cause of neuro inflammation. I try to screen all my new patients and all my patients to make sure that they're not living in a moldy home, or if they've had a past exposure that that has been dealt with appropriately. And so again, environmental exposure can lead to a leaky blood brain barrier. The neuroQuant is a way that you can visualize the brain and see out the affected, you know, by mold, and there are changes in the hippocampus, and so forth. There's also a relationship so there's mold, and then there's fungi. So fungi can also be a factor in again, thinking about the microbiome disruption and brain and there can be fungal overgrowth in the brain, again, producing mycotoxins and that can also lead to neuro inflammation. neuro parasitology This seems like a small thing, but it is probably more common than we realize. And this is one you know, parasitic infections can affect the brain and drive your human behavior and also create neuro inflammation.

Christine Schaffner 33:39
And borrelia, I treat a lot of Lyme disease, and that has an affinity for central nervous system, as well as every system in the body. But this is kind of just a symptom checklist and just looking at cranial nerve symptoms, mental emotional symptoms, and of course on neurological physical symptoms, and then papers to show the connection between Lyme and neuro psychiatric symptoms. So again, I think about neuro psychiatric presentations, of course it's multifactorial, but I think a lot of it can be neuro inflammation. So there can be, you know, I think we need to look at the infectious component of the brain that's driving neuro psych illnesses, and I hope that in my lifetime, we will get neuro psychiatric symptoms from that framework and get more people better. And then this is a, again, Alzheimer's, that connection. You know, I just painted the picture that you know, there's a viral component to Alzheimer's, but there can also be the spiral keto influence, the neurospirochetosis in the brain related to Lyme. So that can be you know, another factor. So I know I have to go through a lot so I know all of these slides I could spend like a whole presentation on so you know, I just went through, you know, infectious drivers of neuro inflammation So we have lyme, we have mold and fungi, we have even parasites, we have viruses. So kind of that whole ecosystem can be imbalanced. And that can be a driver for inflammation, we can have hidden sources of infection in the tonsils and the sinuses and that could also not only be in carrier lymphatic system, but also dragging up microglial activation. So then, you know, in the US, glyphosate is widely used. And it's the active ingredient in Roundup on Roundup Ready crops are soy, corn, canola, sugar beets, cotton, alfalfa shorten, and glyphosate in humans, the shape of a pathway, which is the biosynthesis of these aromatic amino acids. And so Monsanto, when Monsanto started as a sugar sub safe and non toxic to human cells don't have a sugar, apple butter, gut bacteria do. So that is where a lot of the problems started. It's also patented as an antibiotic and interferes with the function of cytocomes, people that the system in the liver, it's a chelator, it interferes with the synthesis of

aromatic amino acids. So you could have lower serotonin levels and therefore lower melatonin levels, also lower tyrosine too, I mean low thyroid hormone. And then it also disrupts sulfate synthesis and transport.

Christine Schaffner 36:20
So when we think about toxins, we think about glyphosate, and then aluminum. So this is just, you know, a visual to show that we are bombarded by aluminum that you know can be in our food or air or water. And it's a neurotoxin, it can damage the mitochondria, it binds to fluoride, can create oxidative stress, it can increase intracellular calcium, it can keep us in plane, it's in ?? and vaccines and can be immunogenic. And then it can also be carcinogenic and mutagenic. And then it's a synergy, right. So it's not one plus one equals two anymore, right? There's just one plus one equals, who knows at this point, but there's there's the synergistic toxicity. So we know Dr. Seneff put together a paper to show glyphosate plus aluminum can really damage the pineal gland, then because of, she goes through the mechanism in her paper, I won't go through the whole thing. But essentially, when you ingest glyphosate, you make your gut barrier more permeable, because of the increase in zonulin, you absorb more aluminum. And because aluminum affects iron transporter metabolism, you can carry aluminum more easily to high blood flow areas that aren't protected like the pineal gland. And then, again, the glyphosate can also have an affinity for the pineal gland. So when we think about the pineal gland that can get glyphosate, fluoride, aluminum and EMF. And that can of course affct your melatonin production, which we need not only for healthy sleep, but for healthy food products system, which again, if you don't have that, that's leading to neurodegeneration. So, you know, I talked about glyphosate, aluminum I just introduced and then I show the combination, and then there's a whole host of information on aluminum in the brain. So it leads to neuro vascular inflammation, it can create what we call amino toxicity, aluminum can accumulate in the microglia and astrocytes, so if those microglial cells are full of aluminum, then they're not going to be doing their job with no inflammation in an unhealthy way. And then they're also not going to be part of the regulation of the glymphatic system. And so, so that's kind of what that is saying. And then, and this was always really shocking to me, that proves the point. So Professor Exley out of the university keynote, he talks about aluminum in brain tissue. And he's looked at postmortem brains of Alzheimer's as well as children with autism, and found that they were higher in aluminum content. So we know aluminum is a huge, aluminum doesn't bond in the brain, you know, so it, you know, when it's there, it's highly disruptive. I'm so we have glyphosate, we have aluminum, and then we have EMR or EMF. So that's, again, the electromagnetic spectrum here. And so we have, you know, non-native manmade fields, as well as ionizing radiation and non-ionizing radiation. So, EMF like cell phones, Wi Fi, those types of things are in the non-ionizing radiation. And sothey think, oh, they're not going to be as directly harmful to cells. And so that's not that big of an issue. But there's more and more mechanisms showing up especially as we're overexposed. And so these are just some again visuals of EMF

that negatively impact there health, so radio frequency magnetic fields, electric fields and dirty electricity. And then I love the work of Dr. Martin Pall, and he really tries to hone in on mechanisms of what EMF exposures are doing to our bodies, and so, there are reports of oxidative stress with the rise of infertility, it can damage sperm, it can affect the brain and potentially psychiatric effects. It can affect a pattern like apoptosis in a negative way, it can damage the cell, endochrine and recurring changes in the environment and calcium overload. And then a big part of his work is silica peroxy nitrite. And this is, you know, essentially can be very damaging. So, EMF can affect these voltage and voltage gated calcium channels, there can be an influx of calcium, and that can lead to more peroxy nitrite formation. And if that's not metabolized, or if that's overproduced, then it can create a special reward. This is a hydroxyl free radical that can be very damaging to the body. Again, this is a fancy chart of Dr. Marty Pall's just showing that whole process again of EMS voltage gated calcium activation and influx of calcium, the generation of gravity, nitrate, generation of free radicals, oxidative stress, and that can be inflammation, and so forth. Again, if people want to read more about that, these are, you know, just again, articles talking about the pathway. And again, the peroxy nitrite is going to be leading to neurodegeneration because of the damage happening from the prolonged inflammation. And then this is also linking the proxy nitrite, to neurodegenerative diseases here.

Christine Schaffner 41:51
And then here, we get into what, what can we do. So we have a lot that we're up against, and not to be a bummer, but just to be, you know, aware about all these potentially hidden causes of neurodegeneration, again, when someone is suffering from a neurodegenerative disease, they're often given little hope and little, you know, understanding of why this happened to them and can be, you know, genetic, and this will kind of leave it out. But I think there's a huge number of underlying causes. And again, it's not just one thing, or people wouldn't be so sick, it's this combination of things that I think really, you know, affects the brain and can lead to these states. So melatonin has been a huge tool for us. Melatonin helps to induce sleep, helps our lymphatic system and detoxify and repair the brain when we sleep. It's highly neuroprotective, and it can prevent damage from metals. I didn't even get into heavy metals today, but that's a whole you know, well, I got to tell them and and but the, you know, the mercury lab Academy, there's a whole other realm with heavy metals that you know, are affecting the brain, other chemicals, mycotoxins, viruses, bacteria and parasitic bio toxins that can have clear so that melatonin has this protective effect against the brain from aluminum. And that's what this paper shows, and then it also helps to reduce oxidative stress from pathogens. So that, you know, is shown here, and then a lot of the pathogens that I used to see in the office this addresses so I, you know, I went through,

Christine Schaffner 43:30
you know, infections, he talks again, and then Melatonin is a really great tool. And again, we live

in a very melatonin deficient time and because of all these stresses, especially EMF and improper circadian lighting that we get, we get over exposed to blue light, and then again, then our pineal gland is also affected by aluminum, fluoride, EMF and so we have all of these things stacked against us to affect our pineal gland's production of melatonin. So I think one of the key strategies is in supplementing and improving melatonin production for neuroprotective effects. And then this is just something I kind of shared with you.So you know, patients are very, it can be very complex, it can be very overwhelming. And so how I approach a patient is this is a framework I've developed and it's constantly evolving, and it's not linear. It can happen all at the same time. But you know, when we're looking at a patient neurodegenerative illness, we want to support their environment and their terrain. So how do we make sure that they're not in a moldy home? How do we support their microbiomes in their body, clear stuff, pathogens? How do we support their energy system so we know we have this electromagnetic nature of our heart, our brain, we know that increasing coherence is going to be helpful. We know that we have you know biofield so it's kind of working out in the realm of energy that can also help instruct and heal our bodies, clearing blocks like interference fields. So just going through that checklist, if you have a patient with any dental issues or chronic sinus issues, chronic tonsil issues, we'll see sections, all these things need to be addressed. Again remove stress so the body can self regulate and heal. And then we want to optimize. This is a really important part and very foundational to all of my treatment plans I didn't get into here when I talked about the glymphatic system. But the lymphatic system is very important to help for any protocol that you're working on. Also, binders can be very helpful for eating elimination. And, of course, bioflow can be very helpful supporting other organs of elimination, like the lungs, the kidneys, of course, the liver, and the colon, the skin, um, so kind of having that whole framework when we're approaching a patient, you know, and it's again, not one thing or people wouldn't be so sick. And then just kind of thinking about you know, all the things that I just shared. You know, we want to, you know, address the terrain so then support the organs of elimination, lymphatic system, with ongoing mold exposure, identify and treat interference fields and focal infection, support psycho emotional healing, I think, to heal neurodegeneration, we need to of course, support a healthy glymphatic system. So getting good sleep, sleep hygiene to me is sleeping in a black room blackout room, you know, trying to control enough as much as possible. So turning off the Wi Fi at night, you know, screening for dirty electricity. If you're really sick screening for RF room magnetic field exposure within the bed, we want to keep this area draining, we have all sorts of topicals that we use to help the cervical lymph nodes Inclined sleeping can be very helpful to kind of tilt the bed five degrees to help the brain drain, melatonin optimization. So reducing blue light exposure, especially at night, and then supplementation, and then targeted therapy. So I just named all these infections. So I use a lot of like liposomal herbal preparations to help drive in herbs to the brain. And so through clearing line viruses so forth. detoxification strategies to address aluminum. So that's going to be you know, things like drinking silicone water, and foot baths can be helpful. Glyphosate detoxification too can be through using fulvic and humic acid,

antioxidants, sauna therapy. And then EMF is really kind of reducing exposure. I kind of threw in here photodynamic therapy, because that's exciting for me. And that's a really great way to help heal the brain. So you can do different laser treatments on the brain. There's this rubber laser helmet that has infrared and red light can penetrate the bone and kind of clear amyloid beta and get the brain you know, healthy. And then I'm harnessing the power of neuroplasticity. I didn't get into this but there's a lot of things to help support brain derived neurotrophic factor to help create healthy new neurons, create new connections, there's neurofeedback technologies, and you know a lot of other things that can help actually, once you remove the stress, you can also heal heal the brain as well.

Marcus Chacos48:22
There was a epic and that's why I wanted to have Dr. Christine on. This is something that does not get enough coverage, enough depth and the first thing I'm going to encourage you to do. After you've watched this q&a, put it on some side, go rewatch that, tape the notes data and then reach out to Dr. Christine. There's a reason she is working with practitioners and patients in terms of, you know, that amazing capacity that have great influence, because this level of expertise is uncommon, and not easily accessed and now you have available her details and in the playbook. The presentation is easy to watch again, that was you know, epic Christine, I want to applaud you. So yes, you know you're going to hit they're going to honestly people are going to watch this and go wow, I did not know a lot of that. So I'm so grateful to have you here because it is uncommon information, incredibly valuable information. And it is not just neurodegeneration that it's impacted. It's people's entire health and quality of life. So you have to provide an incredible platform, a framework in the educational starting point for people to go. That's what next level looks like. I've got some work to do. I'm going to reach out to Dr. Christine and access her knowledge bank and wisdom to be able to extend my human potential as a practitioner. So thank you for that.

Christine Schaffner 49:47
Thank you so much.

Marcus Chacos49:49
I do have some questions and I've been writing attachment upside down. I started having to write so much as the pages were turning upside down. So I'm going to get all of that down. Okay, the first thing I did, which I want to I want to just also and again, I, that's what I'm talking about, it was like that was just a beginning page. The fact that you start even before talking about the hidden causes of neurodegeneration when you spoke about the, you know, that framework, the the germ theory versus terrain theory, everybody watching this, I would hope and realize that there is no defense for the germ theory, and when we look at the terrain theory is something that is significant. While there is a defense it is we recognize those genes and all

those factors, but the terrain, the host, a strong host is everything. And when I looked at that, and I'm just revisiting some of what you said, they're looking at a terrain, made contrary to because he's intact, and recognize me, I love that, that you went through all the different ecosystems or microbiomes that we have. It's not just the gut, it's the lung, it's the breasts, the orals, the sinuses and the brain itself. Recognizing that we have to have a broader scope of understanding of the environment, of the terrain of different microbiomes. I think that was great. And then also started to highlight, leading into this conversation, about the hidden causes of neurodegeneration, the factors that cause those environments to unsettle. And most of us know about those common elements, you know, we don't eat well, we have gut dysbiosis, there's a gut brain connection, and we focus our attention, energy on those. As chiropractors watching, as we know, we've got to regulate the nervous system, and do self-healing, self-organizing, regulating self-organizing, we know about food. But when you, then as I turn over the page, and this is where I've now got a question for you, when you start to go into those other factors that are so infrequently addressed. And oftentimes the other side of the scope of people's either awareness, middle or expertise, it highlights for me a really important starting question for you, neurodegeneration versus neuro protection. I write as you were talking about some of the neurodegenerative factors that are things we need to avoid, and eliminate. Then when you came back to neuroprotection, you spoke about melatonin, etc. There's roles for things that we need to include or things that we need to do that offer neuro protection. So I'd love for you as the first question, to talk about the paradox really between neurodegeneration and neuro protection, and and how in the scales of those two opposing perspectives or factors associated with health?

Christine Schaffner 52:26
Yeah, no, I think that's a great point. And that balance, right, I think we need to live a lifestyle when I just listed like all that we're up against, right? None of us are, you know, immune or shielded from any of these things. We're all living in existence with all of the stressors that I just shared and then why are some people sick? And why are some people not? So I think we all have to take a really proactive approach and just know that we all could be leading to neurodegeneration, that we don't live a lifestyle of neuroprotection right. And so, the foundational things that I'll continue to share is of course good sleep hygiene, you know, trying to reduce EMF exposure, at least at night, because again, that's cumulative, right? So that's a radiation is cumulative exposure over time. So we can get restorative sleep and then turn on the lymphatic system where the brain can do what it knows how to do, I think we're really in good shape. Other lifestyle things that we can do Marcus is we have again, the number one thing when you detoxify the body is to avoid exposure. So trying to kind of dive more deeply in your personal life to see where you might be exposed to aluminum or glyphosate or EMF or so forth. But how you know, knowing that you know, again, we don't live in utopia and we live on Mother Earth and we know how she's highly polluted right now like we're all exposed to these things,

so and some strategies you know, for neuro protection, and you know, when we think about aluminum, and one of the things that a lot of us can have access to is silica and you can get silica in mineral water. So if I'm, you know, if we drink silica mineral water, we actually naturally excrete aluminum through our kidneys. And so that's a really great lifestyle tool. You know, you guys are not that far from Fiji. But Fiji water as you know, the high you know, silica water, so that actually has, I believe, 91 milligrams per liter and that way, I think his studies were around 15 to 30 It's been a while since I looked at them. So again, mineral water can be very good. You know, the high end silica you can supplement with silica as well. So I think those are great. I'm also a fan if you can have home tools like a sauna, if you can afford that or have access to that or foot bath or you know, just even getting out and sweating is great, but getting the you know, the routes of elimination moving can be very helpful. And you know, glyphosate, I use a lot of products in the US from a company called Cellcoreand they're fulvic and humic acid, so I'm sure they're similar, but then that has to be there, they're high in minerals, but they also can be really great for helping the elimination of glyphosate and other heavy metals as well. And so, you know, it's just as balanced. I mean, there's a lot of lifestyle things that we can do, you know, energetically that can also support, you know, our brain. So, you know, I'm a big believer in, you know, doing things like grounding, and I know, that sounds like, so simplistic, but even with this idea of heart brain coherence, you know, gratitude can be a very, you know, powerful state that we can get the body in, and that can increase more resilience to make us you know, basically make our heart rhythm more coherent, that can help or inform our brain, I'm not only didn't just feel better, but we actually organize the field of energy in your body to move us towards health. And so, you know, I think that's, you know, accessible to people. Um, you know, I'm a big believer in like, lifestyle detoxification tools. And so that's going to be like the sauna and the foot bath, you know, doing binders, staying hydrated, you know, dry skin brushing for the lymphatic system, and opening up the channel and the neck. So, um, and then there's some herbs that I use often. There's one called Chinese skullcap or baykal, and is back to the medium and that I use a lot as an antiviral, which we want to knock back their viral load over time. But it also helps to increase brain derived neurotrophic factor. So it can be very helpful for neurogenesis and neuro protection. So that is another strategy. And then I, you know, I don't know if you all have access to peptides, but I've been using more peptides in my practice, and there can be more nootropic or neuro protective peptides, there's one called cerebral sin, that is really great for neurodegeneration, and then also can be good for just maintaining a healthy brain. So yeah, those are just kind of a brain dump, I'm happy to go into anything in more depth.

Marcus Chacos57:06
That's great. I love that. So there's that, that balance of, you know, we know we need to eliminate the, the infective agents, which is, you know, highlighting those hidden causes are so many those factors, we need to get rid of those heavy metals, we can minimize our exposure. So that's the, those neurodegenerative things that we can avoid or eliminate, obtain, as you

said, you just listed off the top of your head 10 15 20 things that people could include or incorporate, that they can naturally do as a byproduct for their lifestyle, to shift the body into that neuroprotective framework, because you're right, can eliminate all of those neurotoxins, all those neurodegenerative influences, we can minimize a number of them, we can avoid many of them. But to be, we can't go back to the environment that we had, you know, 2 300 years ago. You know, pristine water, amazing air, unless you're in those Mikey battery areas are developing. So we need to do what we can on our own, in our own way. So if somebody was to say, Well, no, Christine, there is a massive amount to include to incorporate, and see the necessity, I value all of that important, we will start with a patient who, you know, mostly is not going to take on board order because it can be overwhelming. So where would we start? What would be the immediate changes, you would suggest both on a neurodegenerative removal, but also in neuroprotective inclusion, it's a starting point for people.

Christine Schaffner 58:36
Yeah, so, um, I know that's the hard part. So I always like starting point and prioritization. You know, I think it also depends on where you are with your health. Obviously, if you're already struggling with a chronic illness or an early generative illness, you have a lot more motivation and meaning to be more proactive, aggressive, and do a lot more things. But if you're already feeling good, and you want to maintain feeling good, you know, incorporating lifestyle practices that can be supportive, and I feel like it can go a lot of different ways with this. And you know, poor sleep is important. And melatonin could be really beneficial for a lot of people given we're talking about brain health. But I would say also, Marcus, is just really supporting the lymphatic system, again, there's a system in the brain, but it's this body wide system that our body is wired to cool ways to do immune surveillance. So those two things that we need to address that we can get our lymphatic system moving and working well and optimize our body's happiness even with all these assaults and so, things that you can do and find what works for you, but walking and movement, so movement alone is a good way to get your own body system moving. There are these rebounders which are trampolines that you can weigh down on or vibration plates. There's also pricing by That can be very helpful. And there's herbs and strategies and, you know, different equipment and all that good stuff. But that is, you know, you know, I think focusing on the lymphatic system could be a very important thing to help move you towards health. I didn't talk too much already around the biliary system or like the liver, gallbladder, but having good bile movement, BIOS, a good route of elimination, so it helps us get their waste and help set up their train of our digestion. And because of it helps the environment on our microbiome and helps with peristalsis for bowel movements and things. So they feel, you know, going, failure system, increasing that flow in the body can be really helpful. I know I gave you a lot to do right there, too. But I just, you know, again, finding what works for you, I would say pick 1 2 3 things to start with, and just see how you feel most people feel better from these things. And that helps them to continue to do them and create a lifestyle around them.

Marcus Chacos1:01:03
The idea of a neuroprotective lifestyle and a checklist, when you're a degenerative neuropathic for one side, and you say to the, to the patient, okay, it is 20 things you could be eliminating, excluding 20 things you could do, let's just start with one of each per week, and then build that over time. So you're making sustainable, supportive and moving that direction, or that neuroprotective lifestyle that you I just think that's an incredible concept. And to bring this to conclusion, I think there's such a, you work with people throughout the world in terms of not just patients who've had frustration disillusion, but also practitioners who want to move in that direction of, you know, being more complete in their approach. And, and you spoke about, you had that experience? How do you work with practitioners who want to have a greater impact with their, with their patients, and to develop their own model of, I guess, you know, working on your own protective way?

Christine Schaffner 1:01:59
Thank you, thanks for asking. You know, I, I recently developed my first professional course, I've been practicing for a little bit over 10 years, and I've trained a number of residents and, you know, again, you know, when you when you do this work, at some point, you know, the more you know, the more you realize, like, Oh my gosh, do I know anything, but I have a lot of clinical experience, and my patients teach me each day. And I of course, actively see patients four days a week, and I learned a lot from them. And so my course is a three month training program that you can find on my website, Dr. ChristineSchaffner.com, I love creating community around practitioners as well. And so not only within the people who come to learn me, but also from the network that I have, that I invite to also train with me. And so there are especially topics that, you know, we go through, you know, with different experts. So it's been a lot of fun, and just kind of walking people through my, my framework that I can add to that, as well as, you know, clinical pearls that I'm always learning and then how to, they can support patients. I mean, I think we, you know, we have to work together, there are so many people who are sick in this work, and especially in the light of what's happening globally with the pandemic in 2020 just highlights the need for harmonization, as you know, I think the world would be in a very different place if we embraced these principles, these concepts, these tools and not have to, and we wouldn't have to suffer so much. And so, um, so yeah, I'm all about sharing what I know, it's always evolving. And I can find more information on my website, DrChristineschaffner.com.

Marcus Chacos1:03:47
Those contact details are in the playbook. The details are not only there, but also some of the resources that Dr. Christine provides. But Christine, I, this has been for me, I mean, I have a lot of my neuroscience and most of my strong background of brain health. And I think I just wrote four pages of notes of things with questions that I'm not going to ask today because I'd be on

this call for you. But it was just getting to some of the points that have been while I'm so grateful for your presentation, sharing your knowledge, insight and wisdom. This for me is a way to unfold the next level of understanding. So thank you for being part of the summit.

Christine Schaffner 1:04:28
Thank you so much for having me and the work that you do. And I'm sure I could learn so much from you as well and really, I'm excited to be part of it. So thank you