Investigating the Mechanisms of Long-Haul COVID
A Special Interview With Stephanie Seneff, Ph.D.
By Dr. Joseph Mercola

Dr. Joseph Mercola:

Welcome, everyone. Dr. Mercola, helping you take control of your health. And we're joined by Dr. Stephanie Seneff, who's been with us a number of times previously. Maybe the last time was discussing a paper she wrote at the Food and Chemical Toxicology journal that was about G-quadruplexes. It was a magnificent paper, talked about the microRNA complications of the vaccines and why it should be, so it was very controversial, so controversial that the editor of that journal resigned because of the controversy. It created quite a stir. And the co-author of that paper was Dr. Peter McCullough, which most everyone watching knows of.

So, we'll talk a little bit about that paper, but if you don't know Dr. Seneff, how could you not know her? But she's a senior research scientist at MIT (Massachusetts Institute of Technology), very prestigious institution. I'm shocked that they discredited her or de-platformed her. I don't know how she got away with that. But she's done it, so thankfully, she's still around and has her credentials. So, welcome and thank you for joining us today.

Stephanie Seneff:

Delighted to be here. Thank you for having me.

Dr. Joseph Mercola:

Yeah, we actually did [an] interview that paper that got knocked off.

Stephanie Seneff:

We did.

Dr. Joseph Mercola:

Actually, why don't you-

Stephanie Seneff:

Before it was published I think, right? Yeah, I think we did it right before it came out.

Dr. Joseph Mercola:

Yeah, yeah. I did. You didn't want to publish it, you didn't want to do the interview. For those who don't know, you write a paper and it may take months or maybe even longer to get into the journal because it goes through peer review. So, the paper existed, Dr. Seneff was kind enough to send me a copy. I read it. I had to read it two or three times because it was like almost 40 pages. It was almost a book.

Stephanie Seneff:

That's really a challenge. Yes.

Dr. Joseph Mercola:

It was complex topics but it was just magnificent. So, why don't you describe what happened?

Stephanie Seneff:

Yes, well, that's interesting. Someone had sent me a link to a Twitter page where these guys were discussing their frustration that they couldn't get the message out that our paper was so dangerous and there was no way that it should stay up, that it should get retracted. And they had contacted the editor and the editor said, "Well, go ahead, submit a letter to the editor and we'll go through review process. And if it passes review, we'll publish it." And so, they did. And they got four reviewers. And basically, none of the reviewers liked their paper. So, it got rejected and they were bemoaning the fact.

They were so shocked in this Twitter feed that their paper had been rejected, that they couldn't get out the message that our paper was so dangerous and that our paper definitely should be retracted really, even if it was true. There was almost a message that you can't allow someone to publish something that jeopardizes so many people because these vaccines are saving lives left and right. And this paper is discouraging people from getting the vaccine and that is just terrible.

And basically, that was their message that you have to retract papers like this, you have to not let them get published. And that certainly is the general policy of the journal. This whole system of journal publication is based on, at this point, the premise that you cannot let a paper like ours get published because it's too dangerous in terms of preventing people from getting the vaccine.

Dr. Joseph Mercola:

Yes, indeed. Yeah, that's definitely happening and it's just extraordinary that it's happening at this point in time because there was a recent letter or an article published in the Atlantic by Emily Oster that was requesting amnesty for their ignorance.

Stephanie Seneff:

I've seen that.

Dr. Joseph Mercola:

They're beginning to understand that they were wrong. Not everyone, of course. There's still many that are sticking to their guns. But even in light of the fact that the observations prove out what you were saying and I was saying a year or two years ago.

Stephanie Seneff:

Two years ago.

Dr. Joseph Mercola:

Two years ago, we were telling them the truth and they refused to listen to it because they were so either brainwashed or part of the global cabals and had an agenda to essentially distribute this vaccine, come hell or high water, or a jab is more appropriately called.

Stephanie Seneff:

Yes.

Dr. Joseph Mercola:

Well, why don't you just summarize some of the highlights of that paper? Because it was really extraordinary, and the G-quadruplexes.

Stephanie Seneff:

The whole thing is just amazing. And I learned a lot, of course, doing that paper. We had a person on the team who was an expert on G-quadruplexes and I didn't even know what they were before I joined this team. And we started reading about all these papers about G4s. And they're so fascinating and they're so misunderstood. No one quite understands what they do. It's one of those very mysterious things along with prion proteins. And I've become obsessed, I've been obsessed with prions for a long time, even before COVID. I find them so fascinating and I so much want to understand what they're doing.

And I'm actually making great headway, I think in understanding what it is they do for the cell. People know they're very important. They're very essential proteins for the cell when they're working correctly. But then, when they misfold into this other state, they build these beta sheets and then they precipitate out of the cytoplasm and then they build these plaques. And it's the same thing, Alzheimer's plaque. The amyloid beta is an example of a prion-like disease because amyloid beta is not the prion protein.

There's a unique human prion protein, the human equivalent of the Mad Cow protein, the protein that caused Mad Cow in cows. And there's a sheep condition called scrapie. And of course, the deer had this chronic wasting disease right now that's a prion protein disease. So, there's all these debilitating neurodegenerative diseases that come out of the prion protein, and the prion protein actually binds to its own G4s.

And in so doing it promotes it to misfold into the wrong shape. And so, the vaccines produce a version of the messenger RNA that codes for the spike protein. Their version is enriched in guanines compared to – it produces a lot more G4s than the original mRNA that the virus produces. So, it's a different form.

Dr. Joseph Mercola:

The G in G4s is short for guanine, right?

Stephanie Seneff:

Yeah. Let me explain the G4s actually because I didn't do that. Guanine is the G and G4s means four guanines.

Dr. Joseph Mercola:

Which is a nucleotide, one of the four.

Stephanie Seneff:

Yeah, it's one of the four nucleotides, basic code for DNA. And so, they're all over their DNA and the RNA, they all have guanines. But you have four guanines, sometimes in the single strand or sometimes even hooking across two strands. But basically, you've got four guanines that form this G-quadruplex shape. It's like a little box that they shape in that way and then it gels the water that's around them, when they do that, it forms gelled water. And then, the prion protein itself can bind to its own G4s that are in its own RNA. And then, in doing that, they can promote this misfolding problem that causes prion disease. And so, the messenger RNA in the vaccine, there's lots of it.

It's a big dose of this messenger RNA that is enriched in G4s. I think the original spike protein, I'm going to forget these numbers exactly, but it had four and then there were nine and there were 16. It was many more in the two different versions of the messenger RNA for the two different vaccines had different numbers, but I think it was nine and 16 or something like that. So many more G4s in the vaccine RNA, which then support, and then the spike protein upregulates. It causes the cell to produce the prion protein.

So, the cell is producing the prion protein in the context of a situation with lots of G4s lying around from the mRNA from vaccine. That's a really dangerous situation for causing the prion protein to misfold and causing the prion disease.

Dr. Joseph Mercola:

So, are these G4s, the pathology that they cause, is it only related to prion disease or do they contribute to other conditions like long-haul COVID?

Stephanie Seneff:

Oh, probably, it's connected to that. And again, that's the spike protein. I think the spike protein is the source of long-haul COVID. And I think the vaccine facilitates the symptoms of long haul COVID more easily than the virus does. The virus is really only people who have severely deficient immune system that get severe disease that get to the point where the spike protein gets into the brain because normally, it does and it stays in the lungs or it even just stays in the nose if you've got a really good immune system. But the vaccine facilitates it because the vaccine starts in the muscle, the immune cells come in, they carry it into the lymph system, they take it to the spleen.

And in these germinal centers where all the action is where they're producing these antibodies and in order to produce the antibodies, they have to release exosomes. That's actually been established in research that we've talked about. The exosomes are part of the process by which the cells communicate to induce the antibody production, which is the goal of the vaccine. And the vaccine, I have to say does a fantastic job of producing high levels of IgG antibodies, which are really the ones that are associated with autoimmune disease.

It doesn't make the mucosal antibodies, it makes this IgG, which is actually much more dangerous in terms of if there's too many antibodies. They can cause autoimmune disease through molecular mimicry. And that's another whole aspect that I think is going on. That's why you're getting this platelet problem where platelet count goes down to zero because you get

antibodies to the platelets by molecular mimicry or even because the spike protein is binding to the platelets and they're getting antibodies to the complex and you're wiping out the platelets.

Some people are getting this thrombocytopenia and VITT (vaccine-induced immune thrombotic thrombocytopenia), these conditions that can be life-threatening. And there's a huge signal for thrombosis, and the fact the paper talked about the thrombosis, we have these tables in that paper that show, I think there's seven tables for different aspects of the symptoms of the vaccine. And in different categories, there's a whole table on the liver, there's a table on thrombosis, there's a table on cancer, there's a table on the vagus nerve, and all of the inflammations of the nerves because those exosomes are traveling up the vagus nerve making their way to the heart, to the brain, to the liver. And they're causing disease in all of those organs.

And you see it very clearly in the VAERS (Vaccine Adverse Event Reporting System) database, 98%, 99% of the cases of the reports in 2021 for these conditions were COVID vaccines and 1% was all the other vaccines combined.

Dr. Joseph Mercola:

That's fascinating. I recall reading earlier today, studying an article that was pretty confident that every single person, yes, every person who gets a COVID jab has some element of heart disease and damage. It may not progress to full-blown myocarditis or pericarditis, but nevertheless, it is damaged. You can probably confirm that by doing serum troponin levels, which is a protein that's used to measure heart damage. But most likely, it not only affects the heart but the brain and the immune system. So, I'm wondering if you can help us understand how that process occurs.

Stephanie Seneff:

Yes, I think the whole issue is the spike protein being released by the immune cells in the germinal centers, in the lymph system and in the spleen releasing these exosomes that are traveling then along nerve fibers and reaching all these critical organs because the spleen has a very good connectivity with the liver, the heart, the brain, the gut via the nerve system starting with the splanchnic nerve and then hooking up to the vagus nerve and then traveling to all of these organs along the vagus nerve. So, these exosomes are migrating along the vagus nerve and they're arriving at these organs and they're getting taken up by cells there.

And everywhere they go, they cause inflammation. The spike protein is very good at causing inflammation. And that's been shown in multiple studies. They've shown exposure of the brain cells or the brain. Even a mice getting exposed to spike protein through cerebrospinal fluid, it gets into the brain. It gets into the nerves, into the neurons in the brain, and it gets into the heart muscle and then it causes inflammation. It causes the immune cells to migrate to the heart, for example. And that's how you get this myocarditis. You get this inflammation in the heart.

You actually also get inflammation in the muscles. I was looking at myositis, which is a muscle inflammation and that's another issue. And I've actually been in contact with multiple people who suffered from severe muscle damage from the spike protein even to the point of being debilitated because of muscles. So, not just the heart, but the skeletal muscles are affected in a really bad way. And of course, when you inject it, the muscles here are getting a huge amount of

exposure, that's a whole, other issue.

So, you've got in the brain, of course, inflammation in the brain and that's what causing neurons to be damaged and that's causing cognitive disorders. So, I think the long COVID is caused by the spike protein reaching the brain. And that's really become, again, many papers have talked about even with the disease, the long COVID, they think it's the spike protein, not the virus, but the spike protein itself.

Dr. Joseph Mercola:

Is it the spike protein or spike protein catalyzing the microRNAs that are embedded into the exosomes that travel to the tissue?

Stephanie Seneff:

Yeah, well that's the other piece of the puzzle, isn't it? Because the microRNAs, so this is what we talked about in our paper. We have quite a bit on the microRNAs, two specific microRNAs that were found in the experiment.

Dr. Joseph Mercola:

Well, before you go into that, I'm sorry, I should have expanded on that comment because many people may be confused with messenger RNA, which is what the COVID jab is, but this is two different things completely. So, first, help us understand the difference between a microRNA and the messenger RNA and then continue with your explanation.

Stephanie Seneff:

Yeah, the biology is complex and I hope that people get enough of a hint of all these different things to become interested. Because it's really fascinating. Once you dive into biology and you learn about all these things, you really become hooked. I am so hooked on biology, it's just so fascinating.

Dr. Joseph Mercola:

And you got a brain to let you be hooked, that really helps us all to understand the important details.

Stephanie Seneff:

It is amazing. And so, the microRNAs, it's a whole system of these and they're short pieces of RNA. They're about 22 nucleotides long. They don't make protein. They talk about the coding RNA and that's a messenger RNA is coding messenger RNA that makes the proteins. And it's the messenger RNA that is in the vaccine that codes for the spike protein. But these immune cells that are coping with this, all the spike protein, they're making spike protein, they can't stop doing it because the RNA has been designed to be extremely resilient. That's another thing about these vaccines. It's been shown experimentally that they last for a couple of months, at least a couple of months.

The RNA is still around. And that is quite shocking because normally, a messenger RNA only lasts a few hours, but these cells in the spleen that are coping with all the spike protein that they

can't stop themselves from making, they have to get rid of it until they push it out in the form of these exosomes. And in those exosomes, they also package it up with other things. And some of those other things are two particular microRNAs that were found experimentally by these people in India.

They found two RNAs that were particularly significant because these two microRNAs would interfere with type one interferon response. And this was a big topic of our paper. We talked about Innate Immune Suppression as a title of our paper, due to this effect of these microRNAs that are packaged up with the spike protein. And it's shipped everywhere. So, everywhere it goes, it delivers these microRNAs which disrupt the immune cell's ability to respond to type one interferon. And so, that's really fascinating.

So, these microRNAs actually have a very high-level controlling element in the regulatory process of biology. They control which genes are expressed, and each one has unique behaviors, each microRNA and there's thousands of them. So, it's a very complicated system.

Dr. Joseph Mercola:

It's probably more than thousands, I would think.

Stephanie Seneff:

Yeah, I don't know.

Dr. Joseph Mercola:

They're so small that you can have so many permutations of that.

Stephanie Seneff:

They probably have not identified anywhere near all the ones that there are.

Dr. Joseph Mercola:

I would not be surprised if they're millions.

Stephanie Seneff:

But they're finding them left and right.

Dr. Joseph Mercola:

Yeah, they identify ones might be thousands, but it just can't be thousands. Doesn't make any sense. There's so many complex systems that need to be controlled and regulated. So, anyway, that's part of it. So, the whole process of the damage and the myocarditis. And I think we were-

Stephanie Seneff:

And I want to say something about the microRNA's type 1 interferon-

Dr. Joseph Mercola:

Yeah, sure.

Stephanie Seneff:

-with respect to adrenaline, which we could get into that holistically like we did.

Dr. Joseph Mercola:

Yeah, definitely. Because you just wrote a paper from 2004 that addresses this, I believe.

Stephanie Seneff:

Oh, my god. It's amazing.

Dr. Joseph Mercola:

That used a beta blocker to address this. So, tell us about this because it has the connection with adrenaline, to the myocarditis and-

Stephanie Seneff:

Absolutely. I think the paper was from 2005 and it was mice, and they exposed them to a virus that causes myocarditis. So, they were doing an experiment where they wanted to see what would happen if the mice were suffering from myocarditis and then they got a shot of adrenaline. That was the question. And so, they gave them this virus and then 120 days later, which is a long time in a mouse's lifespan, they injected adrenaline. And the adrenaline dose that they injected killed 70% of them. And then, they had control mice who didn't have the myocarditis and they injected them with the same dose of adrenaline and nothing happened.

They didn't suffer any damage, any serious damage. And they showed, of course, that there was a lot of heart damage in these. They died of heart failure basically because of this adrenaline. There's too intense a reaction to the adrenaline. And what's interesting is that, and this is where I started digging around other papers and I found a paper that says that the type I interferon response in the chromaffin cells, which are the cells that make the adrenaline that reduces their production of adrenaline. It actually tames them and prevents them. And they argued that the reason was because it could be too intense.

So, the type I interferon is supplied to these chromaffin cells, but the vaccine has interfered with their, I'm theorizing, the vaccine has interfered with their ability to respond to type I interferon. So, they don't respond so they produce too much adrenaline. That's a possibility too that the adrenaline response is too great. So, we don't entirely understand what it is about the myocarditis that makes the mouse so sensitive to the adrenaline. But that certainly was the observation that they had in that paper.

And so, it's really disturbing to think about the vaccine setting up a person with myocarditis. And then, they're an athlete and they're in the excitement of a game. They made a shot at the basket, got at the finish line, right at the end of the game, they managed to win the game. They get so much adrenaline, they keel over and die.

It's because the adrenaline rush is not able to be handled properly because of the myocarditis. I think that could be what's going on with the sudden death problem because we certainly are seeing lots of young people dying of suddenly heart issues.

Dr. Joseph Mercola:

I'm not familiar with any autopsies that have done to identify the specific cause. So, you think it might be myocarditis rather than microthrombi that are being activated by the spike protein?

Stephanie Seneff:

Oh, the microglia are being activated for sure.

Dr. Joseph Mercola:

Microthrombi.

Stephanie Seneff:

Oh, yeah. You mean the problems with the thrombosis as well? You're absolutely right. All of it's going on. And the endothelial cells are inflamed as well. So, the blood vessels are being screwed up and you've got all these blood clots. The blood clots, I think, are very interesting and I think that's also connected to the prion aspect. The spike protein, I think, causes – there's a lot of proteins that can misfold amyloidogenic, this whole concept of amyloid. And there's a whole bunch of proteins that can misfold into ways that cause them to precipitate out. And there are proteins in the blood.

In fact, the whole formation of – when you have the blood clots and you form those clots, those are tough things to break down. And when you put the spike protein into them, they become tougher. I think they become harder to unravel so you end up with these blood clots. The spike protein triggers the production of blood clots that are very difficult to break down. That's what I think is happening.

Dr. Joseph Mercola:

Is that because they're encoded with fibrin, you think?

Stephanie Seneff:

Yeah, fibrin, they're binding to the fibrin, I think and causing it then misfolds in this way that becomes very difficult to break down. Which is the same thing that happens with the prion proteins. When they misfold into this critical other form, they create a gel actually and then it becomes denser over time. And so, it's a very slow process with the buildup of these, of the plaque in the association with these neurodegenerative diseases. But the plaque initially forms and it's got this gelled water and then over time, it gets even tougher and tougher and it becomes completely inaccessible to the water base.

It just precipitates out as this thing that just sits there for the rest of your life. Nobody can get at it. The immune cells can't break it down. It just stays there. It can't be cleared.

Dr. Joseph Mercola:

Well, that's why I'm a big fan of those who suffer with long-haul COVID of using a fibrinolytic enzyme like lumbrokinase-

Stephanie Seneff:

I think that's probably good because that's what's needed.

Dr. Joseph Mercola:

You got to break it apart. Otherwise, how's it going to do it? Those enzymes can be used as digestive enzymes, so you have to take them on a stomach, otherwise, they're going to break down the protein in your food and not the fibrin that's surrounding this clot. So, that's going to be really key to do. So, you got to take it several times a day, two or three at once on a completely empty stomach, an hour before, two hours after a meal. Lumbrokinase is the most potent, maybe 30 times more than I think serrapeptase or even a lot more than nattokinase. But sometimes, people can't tolerate. So, the other ones are serrapeptase and nattokinase.

But all the three of them are fibrinolytic enzymes that break down that-

Stephanie Seneff:

Yeah.

Dr. Joseph Mercola:

-shell that's so hard to do, because it's the fibrin and then you've got the misfolding. So, one of the strategies I like for misfolding, I've actually felt really, really fortunate because Dr. Paul Marik, who's the – Marik protocol is named after the MATH+ protocol for sepsis, was really not a fan of mine. I tried to interview him several times.

Then he developed, well, he had Type 2 diabetes and hypertension and was taking drugs for many years and realized, "Oh, my gosh, you can use time-restricted eating." And solved his issue, he lost 30 pounds, and his whole life changed. And the position about me changed. So, we've been collaborating.

Stephanie Seneff:

That's great.

Dr. Joseph Mercola:

For the last two months, I've been teaching about near-infrared sauna and the use of that because it's completely different than others. In fact, he liked it so much. He invited me on his FLCC (Front Line COVID-19 Critical Care Alliance) event, which was 50,000 people or so. I did it an hour presentation on it. But he's adopting it for the FLCC protocol, the near-infrared sauna. So, I think to address these misfolding, it's one of the simplest strategies that you can do. Maybe not really simple.

It's an advanced technique that I think almost everyone benefits from. But if you're suffering from something like long-haul [COVID], I think it's going to be really helpful to help the misfolding. Certainly, if it doesn't, at least it's going to help prevent dementia, and that's well-documented. So, dementia is something none of us want.

Stephanie Seneff:

I know. Yeah, that's a very scary one.

Dr. Joseph Mercola:

That's another misfolded protein. You got the-

Stephanie Seneff:

Absolutely. That's why that's-

Dr. Joseph Mercola:

-amyloid and tau protein.

Stephanie Seneff:

And I think the spike protein is going to facilitate the increase of all of these diseases, not just the prion disease, not just the heart disease. But all of these misfolding diseases, I think, are going to be related by the spike protein.

Dr. Joseph Mercola:

Those are long-term, short-term, though, we've already got the message. It just shocks me that even in the alternative media that covers this, certainly the mainstream media did, because I read this, it was in the summer, The New York Times. I read this article and my jaw just didn't drop about as much as it did when I read the study in July of 2020 with Dr. Barbara Starfield, cited data in JAMA (Journal of the American Medical Association) that essentially showed that physicians were the third leading cause of death. They didn't say that in the headline but I interpreted, and it was actually a meme that went around the internet that I put together.

So, it was the same reaction I had in July 2022, this year, The New York Times posted this article that it is normally – an alarm goes off when the life expectancy goes down by 0.1 or 0.2 years, right?

Stephanie Seneff:

Yeah, right.

Dr. Joseph Mercola:

It went down by three full years.

Stephanie Seneff:

That's so incredible.

Dr. Joseph Mercola:

They were blaming it on COVID deaths, which made no rational sense because the average age of a COVID death was 85. That would mean the life expectancy would increase by three years.

Stephanie Seneff:

Actually, there's a new paper that showed that, that was interesting because it didn't mention the vaccines, but it looked at the increase in mortality for different age groups and for different phases of COVID. They had that divided into four phases. And the fourth phase was from October 2021 to March of 2022. Did you see that paper?

Dr. Joseph Mercola:

I didn't. It's certainly the jab period for sure.

Stephanie Seneff:

Yeah. And they announced that the biggest increase in mortality, and this was cardiovascular mortality, I think it was even heart attack mortality. The biggest increase was observed for the young adults in that period, in that fourth period. That's when you've got this mild case of COVID. And so, all these young adults are dying of heart attack. And so, they said that was the group that had the largest increase in mortality. And they didn't mention the vaccines at all. So, I don't know whether they're not mentioning the vaccines because they won't get published if they don't or whether they actually didn't think of the vaccines.

Dr. Joseph Mercola:

Yeah, they can't. Well, in your experience for your papers just shows that it fades.

Stephanie Seneff:

Absolutely.

Dr. Joseph Mercola:

You cannot mention vaccines.

Stephanie Seneff:

It's so hard. Yeah,

Dr. Joseph Mercola:

And I neglected to mention, I think that the journal that you're publishing in was Food Chemical and Toxicology.

Stephanie Seneff:

Food and Chemical Toxicology.

Dr. Joseph Mercola:

Yeah. Or FCT, which is a pretty prominent journal, a high-impact journal. This is not a loose journal. This is why it would create such a controversy.

Stephanie Seneff:

We were very gratified that he was willing to publish it because we know it's really, really difficult for us to get our stuff published in any a high-end journal.

Dr. Joseph Mercola:

And we know why. Because-

Stephanie Seneff:

They bounce it back without review.

Dr. Joseph Mercola:

Well, because if they accept it, they're going to get bounced off their role as editor.

Stephanie Seneff:

Absolutely. Absolutely.

Dr. Joseph Mercola:

Their job is really tenuous. Dr. Peter McCullough, your co-author on the paper-

Stephanie Seneff:

That's right.

Dr. Joseph Mercola:

-was the editor, that primary editor-in-chief of two major journals and he got knocked off of one.

Stephanie Seneff:

I know.

Dr. Joseph Mercola:

I think he still may be in the other one. I'm going to be re-interviewing him soon too. But the owners of the journal who is what controls everything, control the narrative. It's not the editor.

Stephanie Seneff:

It's really amazing. It truly is incredible. And the evidence is so strong. I want to tell you about this interesting insight that I've had recently with respect to the prion protein and the spike protein. There's a very interesting story that I got a hinch of sort from someone, and I, unfortunately, don't have his name handy, but it was someone from Switzerland that I talked to. And he was all excited about this idea of the spike protein causing a prion-like disease but not actually the prion disease that is caused by insufficient prion protein. So, it's really, really interesting.

And I had learned that, like there are these mice that have a version of the prion protein that's defective and it doesn't get produced because of a genetic problem. And those mice actually end

up with features in the brain that resemble prion disease. So, prion disease is misfolded prion protein, misfolded. They don't have misfolded, they have none, but they still get prion disease. It looks a lot like prion disease and they get it early in life. So, that's very interesting.

And I've been reading about what is it exactly about the misfolded prion that's toxic and people don't know. They're having a very difficult time understanding. It's piling up in the brain. So, it looks like it'd be a bad thing to have all this stuff accumulating but they can't actually figure out exactly why it's toxic. And one of the theories that's been growing, I've noticed more and more papers are saying this, that it could be a loss of function, a loss of function problem. Because the misfolded protein attracts other versions of the protein to also misfold and join the club and they build these big plaques, that's removing it.

It's removing it from the cell. So, it becomes a prion protein deficiency. And the prion protein is upregulated in the cells that produce it under stress. And the spike protein has been shown to cause them to make more prion protein. So, when a neuron is exposed to the spike protein, it makes more prion protein. And then, what I think is happening, one possibility is that the antibodies to the spike protein to a particular part of the spike protein are binding to the prion protein through molecular mimicry.

And I even found a sequence that is plausibly the sequence that's causing that. So, it's quite fascinating because there are papers that show that antibodies, and this was also incredible. This whole thing is just an amazing story. It's hard to piece it together in a way that is coherent. But they've been trying to develop a vaccine to help treat the prion disease. And that vaccine would involve producing antibodies to something that is a protein that resembles the prion protein.

It can't be exactly the same because then it's a human protein, it doesn't react. Your immune cells are able to tell self from other. So, when it's exactly the match to the prion protein itself, it doesn't produce the antibody and they know that. So, they want to have a vaccine that contains a protein that is similar to, has a sequence that's similar to, but not exactly the same as the prion protein in order to produce these antibodies. So, these are research going on in that space.

Well, they found out by experimentation that if you produce antibodies to this particular part of the prion protein, the part at the end, the C-terminal end, if you have antibodies to that part, can cause a prion-like disease that looks a lot like prion disease but is faster. It develops faster. And they studied and they found out that what those antibodies do is they prevent the prion protein from going into the endoplasmic reticulum. So, it keeps it in the cytoplasm. The binding of the antibody to this C-terminal end keeps the prion protein in the cytoplasm, doesn't allow it to go into the ER.

And it needs to go into the ER in order to do its job. So, it has a very important function in the ER. It can't do that job. And then, the cell gets sick because of these antibodies. So, there's these 26 people that Montagnier wrote about, Luc Montagnier and his collaborators. They published this pre-print paper with case study of 26 people, all of whom developed symptoms of prion disease within the first month after their second vaccine.

And I picked up on that second vaccine and I was thinking, "Wow, that sounds like it could be, the antibodies are involved." Because it's not the first vaccine, it's the second vaccine. You've already got the antibodies from the first vaccine.

Dr. Joseph Mercola:

They're primed.

Stephanie Seneff:

They're primed. And so, the second vaccine, your cells start making lots of spike protein. Those antibodies come along and bind to it. You're on those exosomes, you've got the spike protein exposed on the exosomes, they're traveling up the vagus nerve. The antibodies bind to them, and then the neurons take up the whole thing. Now they've got spike protein, which induces prion protein plus they've got those antibodies ready to bind to the prion protein and prevent it from going to the ER. I think that is a very good explanation for those 26 cases. All of them died.

Many of them died within three months. All of them died within a year. It's a very aggressive form of prion disease of CJD, basically, Creutzfeldt-Jakob disease. And it would be explained completely by this model of spike protein antibodies binding to the C-terminal domain and preventing the prion protein from going into the ER.

And then, it causes it to break down. Once that happens, it just gets broken down by the proteasome and disappears. So, it's removing, it's causing a loss of function, problem for the prion protein in the neuron at a very accelerated rate, much faster than what goes on with the normal prion disease.

Dr. Joseph Mercola:

Yeah, so that's a novel hypothesis that you regularly come with.

Stephanie Seneff:

Yeah, and I can tell you what the sequence is because there's a sequence and those guys identify, I've written it down here that Montagnier and his team identified a segment of the spike protein that they thought had characteristic prion-like features. And within that segment is a piece that has five amino acids long, YQRGS, YQRGS. Those are five amino acids. And the prion protein has a piece.

Dr. Joseph Mercola:

What do those letters represent? Amino acid?

Stephanie Seneff:

Yeah, they represent proteins. They represent amino acids. R is arginine.

Dr. Joseph Mercola:

What is Y?

Stephanie Seneff:

Y is tyrosine, maybe? I'm not sure.

Dr. Joseph Mercola:

It could be. Yeah, tyrosine. Yeah.

Stephanie Seneff:

Yeah. I don't know these codes actually. It's too bad. I know G. G is glycine, of course, R is arginine.

Dr. Joseph Mercola:

I love glycine. Glycine is so powerful. The smallest amino acid.

Stephanie Seneff:

Yeah. And S is serine. So, you have serine, glycine, arginine, and then, Y and Q.

Dr. Joseph Mercola:

Y could be tryptophan.

Stephanie Seneff:

Tryptophan. I think it is tryptophan. It's one of those aromatics.

Dr. Joseph Mercola:

Yeah, tyrosine is an aromatic too.

Stephanie Seneff:

And Q, is isoleucine maybe. I don't know, I should have them all memorized by now. Anyway, there are five of them and except for the middle one, the other four are all identical with this piece that's near the end of the C-terminal end of the prion protein. So, it's really perfect. It's a place where if you get antibodies to that. Basically, it's a death sentence. I think it's a really interesting theory and it's amazing to me that it actually produces an accelerated form of the disease, which is what these people are experiencing, these 26 people.

Dr. Joseph Mercola:

So, the average person watching this and doing the same, "What the heck does that all mean?" Well, you're getting it first right here. And Dr. Seneff has been pretty accurate in making these predictions and projections early on. So, she'd called it two years before, that mainstream media is starting to acknowledge what she said two years ago. Two years ago, discredited and de-platformed, anyone who suggested what those comments were. So, Dr. Seneff has a really good ability to synthesize this and come up with objective indications from a scientific perspective of what's going on.

So, since you published that paper that got, that's still up in the journal, but might be retracted. Who knows what type of pressure they can put on the journal, but are there any other insights? Because you're just a voracious reader of the literature and you're always scouring it to get new insights. So, I'm wondering what additional insights you uncovered since we last spoke?

Stephanie Seneff:

Yeah, this team has been on fire. We've been writing papers left and right. And of course, they get bounced. They often get bounced without review. So, we struggle to figure out, some of them are up as pre-print papers. We got one published, actually brand new ,in the Journal of Neurological Disorders and Stroke. And I have it written down here. It's "Potential Mechanisms for Human Genome Integration of Genetic Code from SARS-CoV-2 Messenger RNA Vaccination: Implications for Disease." And that's a scary paper too.

Dr. Joseph Mercola:

You were talking about that before though.

Stephanie Seneff:

We've been talking about it for a long time.

Dr. Joseph Mercola:

I think in G4 paper too, you had some-

Stephanie Seneff:

It's always a part of our story in every paper we write because I think it's crucial. And this means that the protein can – so the mRNA can become-

Dr. Joseph Mercola:

Wait, wait, before you go on, you know that this has been fact-checked by multiple organizations to be not true.

Stephanie Seneff:

I know. The mRNA cannot integrate into human DNA.

Dr. Joseph Mercola:

It cannot. It just cannot do it. That's the science. That's the science.

Stephanie Seneff:

Right, right. Yeah. So, we talk about-

Dr. Joseph Mercola:

I'm sorry to interrupt you, but anyone watching this is going to be saying-

Stephanie Seneff:

It's interesting that they say that because when you look, you see there's many, many possibilities, in particular, cancer. Cancer cells are expressing retrotransposon, this LINE-1, which is the human version of the retroviruses. And that's Judy Mikovits' domain with the retrovirus.

Dr. Joseph Mercola:

Is LINE-1 a microRNA?

Stephanie Seneff:

LINE-1 is an RNA, it's a DNA. Actually, it's a very common piece of DNA in the genome, one of those things that they don't understand. And it gets converted into RNA. And the RNA actually codes for multiple proteins that can cause it to copy itself into another place in the DNA. But at the same time, it can copy something else as well, anything else.

Dr. Joseph Mercola:

It's a resource that the cell has naturally, to do its own biological functions.

Stephanie Seneff:

And in fact, it's really interesting. I've read some papers on Alzheimer's disease, which is so extraordinary because Alzheimer's brain has these neurons in it that have way too much DNA like their genome is too big. And what they found is they have lots of extra copies of the amyloid beta protein with different variations. So, what's happening is that's a way for the cell to figure out how to try alternative forms of the protein that's not working. That's what I think is going on. It's really quite fascinating because I think that it provides a cell with the opportunity to fix a problem.

Let's say that it has a protein like amyloid beta that it's making and then that protein is misbehaving. It's not working correctly. And if there's a way for it to understand that that means it needs to make a different version of it, it can do that with LINE-1. And the neurons actually express a lot of LINE-1, which is any cell that expresses LINE-1 has the opportunity to put that spike protein RNA into the genome.

Dr. Joseph Mercola:

So, essentially, the spike protein hijacks LINE-1 and uses [crosstalk 00:40:57].

Stephanie Seneff:

Yeah, LINE-1 essentially sees this messenger RNA and knows how to turn it into DNA for sure. And then, there's another process that involves putting it into the genome. But the other thing I just learned, and we didn't write about that in this paper. I think Greg Nigh shared a paper with me that he had found, he was one of the authors on all my papers, and he shared a paper with me that showed that herpes virus, in particular, herpes is a very big virus. And it has the ability to incorporate human genes into its own DNA. It's a double-stranded DNA virus.

And it's able to grab a hold of some human gene and get it and stick it into its own DNA. And it does it completely in the cytoplasm. It doesn't go into the nucleus. So, it's able to take RNA in particular, RNA, that's in the cytoplasm, convert it to DNA and then take that DNA and put it into its own genome.

Dr. Joseph Mercola:

So, there's a model for it.

Stephanie Seneff:

So, herpes virus, for example, could be carrying spike protein is what this means. It could easily be carrying spike protein. It wouldn't have to involve the nucleus at all.

Dr. Joseph Mercola:

And that specific virus could then replicate and spread-

Stephanie Seneff:

And then, the herpes virus comes alive. It actually does come alive. We've seen that because people are getting Bell's palsy with this vaccine. That's herpes. That's usually herpes.

Dr. Joseph Mercola:

Well, wait, wait. But you got to understand there is no such thing as a virus.

Stephanie Seneff:

There is that one too. Boy, I can't believe our side has some pretty radical people in there who claim these outrageous things.

Dr. Joseph Mercola:

Yeah, they do things. They sure do.

Stephanie Seneff:

There's all the stuff about the other things too that are being found in the vaccines and people are saying, "There's no messenger RNA in the vaccines. It's something else. And they're trying to control us." And all this stuff.

Dr. Joseph Mercola:

Well, they're trying to control us. No question.

Stephanie Seneff:

That part is true. But then, they've got some way to-

Dr. Joseph Mercola:

There is biology here, folks, that's been well-studied and published.

Stephanie Seneff:

You don't need any of this other stuff to be toxic. It's a spike protein all by itself. And of course, the messenger RNA, excess messenger RNA that sticks around for a long time, that really is, and also that gets into the immune cells. The virus doesn't infect these immune cells. They don't have the H2 receptor, but they readily take up the vaccine and now they're stuck producing the spike protein, which is extremely toxic and they don't know what to do with it. That's when they start releasing all these exosomes. And that really causes a lot of trouble because they're spreading it all over the body, and it's very devastating what it's doing.

Dr. Joseph Mercola:

And so, is that paper published yet?

Stephanie Seneff:

It is. It's out. It just came out actually. It's not in the main part of journal. It's like a EPUB ahead-of-print type of thing. There is a webpage and you can get the PDF. And we could post it, I guess we could post it with-

Dr. Joseph Mercola:

Yeah, it's already accepted for publication.

Stephanie Seneff:

Yeah, it's totally been through the review process. It's accepted. It's published. It was a long ride. This was actually the first paper that this team wrote before it included me. It was just Peter and then the Greek guy, Anthony Kyriakopoulos. He's very brilliant. And he's the one that knows all about the G-quadruplexes. But he and Peter had had this paper and they'd shared it with me as an early paper and wondered what I thought. And I gave them back some feedback. And then, they said, "Oh, you want to join us as an author?" So, I did.

And then, eventually, we roped Greg into it. So, now there's the four of us. We're the team of four, the gang of four, if you will. So, now there's all four of us. The paper went through a lot of torture, honestly.

Dr. Joseph Mercola:

Was it six months or longer?

Stephanie Seneff:

Well, we had to keep submitting it and we would try different journals, and either they would bounce it without review or they would review it and reject it. It was a long process. And we finally did find a journal that was willing to publish it. We have to do that. We just keep on, try again until you succeed. It's sad that the work we do, it has to be incredibly perfect in order to get published because there's so much desire to not have it show up in the literature. And that's this paper that was trying to say that our paper should be retracted, that we started this conversation with.

They were quoting President Biden saying basically, that we are killing lots of people because we are getting people to not take the vaccine and that's killing them. So, that's a pretty big accusation. If your paper's going to kill people, then you can't publish it. It's basically, even if it's true.

Dr. Joseph Mercola:

No, no, that's true.

Stephanie Seneff:

That's the logic that they use. And most people I think have the attitude that, "Oh, this disease is so terrible that the vaccine can't possibly be as bad as the disease." I think that's the attitude of most people. “However bad the vaccine is, I'm going to put up with it because it couldn't be worse than the disease. Don't you think?”

Dr. Joseph Mercola:

I don't know, it's an attitude as much as an understanding that's been catalyzed by massive loads of propaganda and brainwashing.

Stephanie Seneff:

I agree. I agree. It's not true.

Dr. Joseph Mercola:

They have no choice. If all they listen into is that, and they don't look at these alternative views, then it's going to be a problem.

Stephanie Seneff:

They can't look at it because nobody's willing to publish it. So, it's so difficult. We're just-

Dr. Joseph Mercola:

Because if they do, then you trust the science. Well, it's not science. It was not published. So, that's one of the-

Stephanie Seneff:

Exactly. That's how they keep it at bay. They just refuse to let us publish our work. But luckily, there are ways you can get your work out. In fact, I think the whole pre-print process is quite exciting and quite revolutionary in the publishing world. I think it's really stirring up the soup because I don't think they thought it through. I'm not sure where the motivation was to allow people to put their papers up and get a DOI. It becomes an official document as a pre-print without review. And these things are showing up like dandelions all over the place. These pre-print papers that say big things about how toxic the spike protein is.

And then, people say, "Oh, it's a preprint. It doesn't count." That's how they fight back. But still, it's out there. There's commentary on it, there's reaction to it. The pre-print system is an excellent

way for people like us to get our stuff out when we are stuck with a situation where we can't get it past the review process.

Dr. Joseph Mercola:

But they can still retract the pre-prints and they have for a number of papers, right?

Stephanie Seneff:

Oh, have they retracted pre-prints?

Dr. Joseph Mercola:

Oh, yeah. Yeah.

Stephanie Seneff:

Oh, yeah. Yeah. And they can refuse pre-prints too.

Dr. Joseph Mercola:

Oh, they certainly can refuse it.

Stephanie Seneff:

And they can say, "No, I won't publish it."

Dr. Joseph Mercola:

Absolutely.

Stephanie Seneff:

And that's happened to us because it's so tightly controlled. But it is a mechanism for people to get things out that are more controversial and then can engender discussion around it as well. So, that's good. But it's amazing. I am fascinated with this protein. It is so fascinating. Of course, also the whole question of where it came from. And there's this recent paper that pretty much says that it would be impossible for it not to have come from a lab, given the signature that it has almost like a fingerprint with the-

Dr. Joseph Mercola:

That was the Ralph Baric, Ph.D., paper, the no-see-ums, that I guess was inserted and used as a signature to identify. And that signature was there. That was there.

Stephanie Seneff:

That is so incredible. That's really the strongest bit of evidence as far as I can tell, to prove that it came from the lab. And now, I really have no doubt because the furin cleavage site, I mean all these things that cause these prion-like places, it's possible that they were trying to design a vaccine for the prion protein because there's a lot of papers talking about that idea. And if you produce a protein that has some pieces in it that are like the pieces in the prion protein, you can get those antibodies.

And they were thinking the antibodies would actually clear the prion protein, just like they've been doing with amyloid beta and Alzheimer's. It's the similar idea. But it backfires if it turns out the antibodies actually cause the disease that you're trying to prevent, which I think is what's going on.

Dr. Joseph Mercola:

Yeah, the whole system is fatally flawed, but the business side of it is pretty obvious. For the last 100 years or so, based on the Rockefeller support of the Flexner Report in 1910, which catalyzed the transformation of medicine and the shift to pharmaceutically base. And a lot of people don't know the Rockefeller owns 50% of the drug companies, 50%.

Stephanie Seneff:

Today?

Dr. Joseph Mercola:

Today. Today.

Stephanie Seneff:

Oh, my God, I did not know that.

Dr. Joseph Mercola:

The twist is that many of the big pharmaceutical giants have had multibillion-dollar judgments against them for the, well, I'm just searching for the correct action, for killing tens of thousands, hundreds of thousands of people collectively for sure, prematurely. So, that's a risk they don't want to take, especially companies like Pfizer. They've manipulated the system so that they have no liability with vaccines. And then, they switched-

Stephanie Seneff:

I know. That's amazing.

Dr. Joseph Mercola:

-RNA vaccines with the EUA (emergency use authorization) and-

Stephanie Seneff:

Oh, and the whole thing with the children, we didn't talk about that.

Dr. Joseph Mercola:

Yeah, we will. Let me finish this one.

Stephanie Seneff:

Putting them in children's agenda.

Dr. Joseph Mercola:

Oh yeah, yeah. Putting them-

Stephanie Seneff:

That's so horrible. In order to keep it safe, after there's no longer an emergency, you have to have it on the children's vaccine schedule.

Dr. Joseph Mercola:

And what they've done like in legal cases, this now becomes precedent, even though it was manipulated through the EUA. “This is okay. We've proved that it's okay. It's safe and effective, and now we can do messenger RNA. We don't have to do human studies anymore. All we need to do is to study on eight mice and you're fine.”

Stephanie Seneff:

I know, that's so amazing, isn't it?

Dr. Joseph Mercola:

So, they're doing that. No liability. The reason is because they have vaccines lined up for hundreds of diseases.

Stephanie Seneff:

I know.

Dr. Joseph Mercola:

They're not going to be drugs anymore. They're just going to be a vaccine for the-

Stephanie Seneff:

Yeah. Syncytial virus is one that they've been working harder, messenger RNA version.

Dr. Joseph Mercola:

Yeah, RSV. Yeah, RSV.

Stephanie Seneff:

And now they're talking about how it's all over the place and they want to get you all worried about it.

Dr. Joseph Mercola:

More fear porn. Absolutely, for a relatively minor disease.

Stephanie Seneff:

One that's caused by that COVID vaccine, because it's going to be the type I interferon, is suppressed, and so you're more likely to get it.

Dr. Joseph Mercola:

Oh, that's a good point. Yeah. Because that's one of its mechanism of function is it induces type I interferon, which impairs the immune system. The immune system, the heart and the brain.

Stephanie Seneff:

Yes, yes. It's really terrible. It's amazing.

Dr. Joseph Mercola:

So, it is probably one of the worst crimes against humanity ever.

Stephanie Seneff:

It makes glyphosate almost disappear from-

Dr. Joseph Mercola:

Yeah, I know.

Stephanie Seneff:

I was so obsessed on glyphosate and now, it's like, "Oh, my God, these vaccines."

Dr. Joseph Mercola:

It's almost nothing. Now, glyphosate's going to make it worse, but boy.

Stephanie Seneff:

Yeah. Oh, gosh. And if we start giving the kids this vaccine every year, God help us all.

Dr. Joseph Mercola:

Well, fortunately, they've engineered the system to allow for it, but they haven't convinced the population. My understanding is it's still under 5% who've adopted.

Stephanie Seneff:

I'm really glad that people are not taking that.

Dr. Joseph Mercola:

Ninety-five percent are not. And there's a lot of woke people and progressives who are not doing it, which is really surprising.

Stephanie Seneff:

It's really great. That's really good to see.

Dr. Joseph Mercola:

But that can change in a heartbeat. Who knows?

Stephanie Seneff:

I know.

Dr. Joseph Mercola:

Who knows what they can do? Propaganda.

Stephanie Seneff:

Well once, if they do start saying you have to have it in order to go to school, how many people are going to cave and say, "Okay, fine."

Dr. Joseph Mercola:

But I think it could have an opposite reaction and really catalyze movement towards homeschooling, which is already-

Stephanie Seneff:

I think so, for sure.

Dr. Joseph Mercola:

-the movement. But there's a lot of parents who are going to say, "No, we're not going to allow this. My child is too precious and I'm not going to expose them to this risk." If 95% are not doing it, my guess is you're going to see explosion of homeschooling.

Stephanie Seneff:

And also maybe a backlash against all the vaccines. Right?

Dr. Joseph Mercola:

Yeah. We're already seeing that. Absolutely. Even a lot of the big proponents now, like Dr. Malone and Dr. McCullough and Dr. Kory, Steve Kirsch, who's not a doctor, but these are leaders in the campaign to inform the public of what's going on. Every one of those individuals got jabbed, everyone. Yeah, I'm pretty sure Marik and Kory did too, but they're in our camp now. They're not embracing any vaccines as a result of the exposure to the truth.

Stephanie Seneff:

Yes. That's good to see. I think we are growing in momentum, and hopefully, we can get over the hump such that enough people wake up that there's a complete collapse of the system, is what I think we need.

Dr. Joseph Mercola:

Yeah. So, you were probably one of the leading scientists exposing the fraud of glyphosate. There were many others, of course, but you're certainly up there and you published papers and Anthony Samsel.

Stephanie Seneff:
And of course, my book.

Dr. Joseph Mercola:
Yeah. Was it "Toxic Legacy"? Is it the name of your book?

Stephanie Seneff:
"Toxic Legacy," yeah.

Dr. Joseph Mercola:
Yeah.

Stephanie Seneff:
Coming out in paperback by the way.

Dr. Joseph Mercola:
Oh, good. So, is there any update on glyphosate, especially maybe as an update as it relates to COVID?

Stephanie Seneff:
Well, certainly. I've been talking a lot about glyphosate as a – I suspect that a chronic exposure to glyphosate is a precondition for bad outcome for COVID-19. And it seems pretty clear to me because you have all these conditions. Obesity, diabetes, even Alzheimer's, cancer. People who have those have a much higher chance of dying from COVID. So, it's a comorbidity association. And of course, glyphosate causes all of those. So, you don't have to use rocket science to figure out that glyphosate might be a factor in COVID-19. And it's amazing when you look at the difference.

I was looking at the mortality rate from COVID. And I was looking at Nigeria compared to the United States. This was some time ago. So, I don't know what the data looked like now, but Nigeria had a much, much lower death rate from COVID than we did. And in fact, even if you normalize for the population, Nigeria has a lot of young people, because they have a lot of children. They have a high reproductive rate. So, they're skewed towards younger ages.

But even if you normalize for that age problem, I think what I found was for every one death from COVID per person, normalized for the old people in Nigeria, you get 100, in the United States, 100 to 1. It's not a trivial difference.

Dr. Joseph Mercola:
And I think their adoption rate of the jab was under 5% if I'm not mistaken.

Stephanie Seneff:

Certainly, all of Africa is being very reluctant to get the vaccines and they don't need the vaccines because they're not getting sick. And Africa has a much lower glyphosate exposure in general. I think South Africa might be the exception because South Africa has been-

Dr. Joseph Mercola:

Industrialized, yeah.

Stephanie Seneff:

But the rest of Africa has very little glyphosate and very little COVID. Whereas you have other countries like us, in Europe and Australia that use a lot of glyphosate and have a real serious problem with COVID. I think there's a correlation. I haven't done it systematically, mathematically with data. But just in general, it looks that way to me. Like the countries that use a lot of glyphosate have a big problem with COVID, which makes sense to me because glyphosate disrupts the immune system. And I have a whole chapter in my book on glyphosate and the immune system.

Dr. Joseph Mercola:

And just to summarize it from my understanding of your work, is that the best and most important one is not to have the exposure, which is really hard to do nowadays. You really have to-

Stephanie Seneff:

I know.

Dr. Joseph Mercola:

-pretty much have non-GMO and ideally organic, otherwise-

Stephanie Seneff:

Yeah, I found when we recently traveled to the mainland, spent six weeks there, different places.

Dr. Joseph Mercola:

Because you live on Kauai now full-time.

Stephanie Seneff:

We do live on Kauai full-time, which is awesome. We were so happy to be back home. But we struggled. You'd have to be in a big city and you'd go and find a Whole Foods and you would buy a bunch of organic stuff and put it in your car and then have to keep it, make sure you've got some way to refrigerate it. And then, wherever you would go in the wilds of Idaho, it's almost impossible to find organic. It's almost impossible. So, you really can't do it in large parts of the country.

And of course, also in the city where people have these little grocery stores in the city that are just pure junk. You look at all the candies and crackers and potato chips and stuff.

Dr. Joseph Mercola:

So, the other strategy is to make sure that your diet is full of glycine, the one methyl group, the smallest amino acid, glycine. And typically you need grams of it. So, you really need to take a supplement. Like 5 grams twice a day, which is a teaspoon or three times a day for some people. But have you encountered any literature to support suggesting that the primary reason is because glyphosate is glycine phosphorylated and it can substitute as, which I disagree with you initially, but then I became gradually convinced, can substitute into proteins. And then, you've got glyphosate integrated into the proteins your body's making. So, if you have enough real glycine-

Stephanie Seneff:

It outcompetes the glyphosate. I think that makes a whole lot of sense. And I think that can certainly help.

Dr. Joseph Mercola:

So, have you had any further studies or experiences to support that assertion?

Stephanie Seneff:

I don't know if I can exactly support that assertion, but I have heard from many alternative medicine specialists that they're finding that glycine is working really well to help people-

Dr. Joseph Mercola:

Okay, well that's good.

Stephanie Seneff:

-with things like Lyme disease and autism. So, it's really a helpful supplement. Of course, there's also cysteine, N-acetyl cysteine, S-adenosylmethionine, those are sulfur-containing amino acids. And I wrote a lot about sulfur in my book because I think glyphosate is an absolute train wreck for sulfur in the body for sulfate synthesis, sulfate transport, sulfate transfer from one molecule to another, every step of the way, it's getting messed up like glyphosate. And so, we have a severe problem with sulfate deficiency along with sulfur, toxicity, actually because of that.

Dr. Joseph Mercola:

There's another support for glycine because one of the most important sulfur-containing molecules in your body is glutathione and tripeptide-

Stephanie Seneff:

Yes.

Dr. Joseph Mercola:

-three amino acids, one of which is glycine, cysteine-

Stephanie Seneff:

That's right.

Dr. Joseph Mercola:

-giving sulfur component and which you get with N-acetyl cysteine.

Stephanie Seneff:

That's right.

Dr. Joseph Mercola:

It's almost like taking glutathione when you take glycine.

Stephanie Seneff:

It's probably better than taking glutathione because glutathione is hard to get. Your body needs to make it from the precursor products. So, you've got the glycine and the cysteine. And you can take your methionine too that can get you to cysteine. But yes, I think that's probably critical. And I actually think the glyphosate's getting into glutathione by mistake in place of glycine.

Dr. Joseph Mercola:

Of course.

Stephanie Seneff:

And that's missing up glutathione. Yeah.

Dr. Joseph Mercola:

Because it's got a glycine.

Stephanie Seneff:

Exactly. So, actually, it upregulates. They've shown that this enzyme that breaks glutathione down into component amino acids, that enzyme is upregulated in response to glyphosate. That's because I think it's getting a version of the molecule that it doesn't like because it's got this glyphosate there, it's not working properly. So, it has to be broken down.

Dr. Joseph Mercola:

Nice. So, the body can somewhat protect itself.

Stephanie Seneff:

Yeah. It tries again, hopes that the next time it gets a glycine instead of a glyphosate.

Dr. Joseph Mercola:

Which further supports the reason to take glycine.

Stephanie Seneff:

Yeah. Glyphosate-

Dr. Joseph Mercola:

Glycine, it doesn't taste bad. It's sweet. It's like almost a sugar, sweetener. So, there's no problem swallowing. It's relatively inexpensive. There's no reason not to take-

Stephanie Seneff:

No good reason not to take it. That sounds really great.

Dr. Joseph Mercola:

It's one of my favorite supplements. So easy to swallow.

Stephanie Seneff:

Good point.

Dr. Joseph Mercola:

Any other insights you'd like to share today?

Stephanie Seneff:

Let me see if I have a list here of something I missed. Yeah, I think I covered everything. That's good.

Dr. Joseph Mercola:

Good. It's always good catching up with you because you help reinforce some really important concepts and really dive deep into the molecular biology of it and help us understand that usually, years before it's going to be ever appreciated in mainstream media that this is what's happening. We're going to have these epidemics and you're giving us the ammunition to understand this well before the science tells us is true.

Stephanie Seneff:

It's frustrating that it's so difficult to get the science out and all the obstacles that we face is really so frustrating. And I just really cry out for the children. I'm so worried about the future generations of this country.

Dr. Joseph Mercola:

And because of the other jabs on the vaccine schedule, I mean, you're the one who was predicting, wasn't it one in two children?

Stephanie Seneff:

Yeah, I think I'm going to make that, I'm probably going to exceed it-

Dr. Joseph Mercola:

2030 or 2050?

Stephanie Seneff:

2032.

Dr. Joseph Mercola:

Oh, '32. Okay. So, one in two-

Stephanie Seneff:

That's born, children born in 2032, one in two of them will end up on the autism spectrum. So, it's somewhat later than 2032. But that was my prediction based on just extending the curves. And if they put this COVID vaccine on the schedule, I think we might beat the deadline on that because COVID, I think-

Dr. Joseph Mercola:

They did put it on the schedule. The question is-

Stephanie Seneff:

Or whether it actually becomes something kids have to get in order to go to school, if it reaches that point.

Dr. Joseph Mercola:

It's on the CDC (Centers for Disease Control and Prevention) schedule and then it's up to each state.

Stephanie Seneff:

Each state, yes.

Dr. Joseph Mercola:

Several states have adopted like California. So, it is on the schedule for-

Stephanie Seneff:

Really, it is already on the schedule.

Dr. Joseph Mercola:

It's already in California.

Stephanie Seneff:

That's terrible. I think Florida actually-

Dr. Joseph Mercola:

No, no. Florida-

Stephanie Seneff:

Florida has said they won't do it.

Dr. Joseph Mercola:

They won't.

Stephanie Seneff:

They've actually actively said they won't. I really love Florida for that.

Dr. Joseph Mercola:

But it's up to the state to implement that mandate. But they can, once the CDC authorized, which they did.

Stephanie Seneff:

And if they do, I mean in fact-

Dr. Joseph Mercola:

The lying criminals on the advisory committee.

Stephanie Seneff:

There are already cases in the various database of autistic people who got the vaccine, the COVID vaccine. And then their autistic symptoms got much worse after the vaccine.

Dr. Joseph Mercola:

Oh, I didn't know that. But it makes sense.

Stephanie Seneff:

It brought on stimming and stuff. It brought on these autistic behaviors, which doesn't surprise me at all.

Dr. Joseph Mercola:

Well, what surprises me that the parent of an autistic child would submit their child to get that. That's so shocking.

Stephanie Seneff:

I know.

Dr. Joseph Mercola:

Doesn't make any sense.

Stephanie Seneff:

It's unbelievable.

Dr. Joseph Mercola:

God, did not know that. All right, well, I don't want to get more bad news.

Stephanie Seneff:

It's hard. Here, it's nice to feel good. You look out at the beautiful blue sky, ocean, and you just-

Dr. Joseph Mercola:

I know Maui for sure, but I think it's true for all the Hawaiian Islands. It's a state. I mean, each island has its own government or is it one Hawaiian government?

Stephanie Seneff:

It's a state. State of Hawaii has a state government, then counties, each county has an-

Dr. Joseph Mercola:

So, county has different regulations. So, Maui County is terrible. They're just so progressive and liberal. Is Kauai as bad as Maui?

Stephanie Seneff:

Hawaii in general is very pro-vaccine.

Dr. Joseph Mercola:

Yeah, yeah. That's what I thought.

Stephanie Seneff:

And of course, they also have a lot of chemicals, they have a lot of chemical industry. Because you've got a growing season all year round. So, the agrichemical industry loves to develop their new GMOs here in Hawaii, including Kauai. So, we have a schizophrenic island. North Shore has a bunch of organic farmers and the west side has all these agrichemical development research where they're creating new GMOs against glyphosate.

Dr. Joseph Mercola:

Are you closer to the North Shore?

Stephanie Seneff:

Yeah, we live on the North Shore. We have the organic farmers around us. So, we are very happy. We have a lot of access to organic food, vegetables from the organic farms.

Dr. Joseph Mercola:

Well, that's great. Well, I'm glad you're there, getting sunshine every day. Have access to good food. We need you alive and healthy.

Stephanie Seneff:

I know.

Dr. Joseph Mercola:

Make sure you get out in that sun. And actually, you might be interested in this. I'm pretty sure I figured this out. This was the first year I've been able to get my vitamin D level to 100, 1-0-0.

Stephanie Seneff:

Excellent.

Dr. Joseph Mercola:

But I think the difference is I've been injecting or actually using an IV of 3 grams of magnesium chloride once a week, or for the last six months, most of the entire spring and summer. And I think that made the difference. I was never able to get up that hyper, but when you have magnesium, your body makes vitamin D much better.

Stephanie Seneff:

Interesting. I didn't know that.

Dr. Joseph Mercola:

It's an important cofactor that is not widely appreciated. Some people understand it, but I just went nuts with the IV magnesium because you can't take a lot of oral. If you do, it's a laxative, you take it in large amount.

Stephanie Seneff:

Yeah, you get the runs.

Dr. Joseph Mercola:

But when you take an IV, you can take as much as you want, almost. [inaudible 01:06:25].

Stephanie Seneff:

I do Epsom salt baths very regularly. Magnesium sulfate.

Dr. Joseph Mercola:

I just got the magnesium chloride. But anyway, it's interesting. I got up to a 100.

Stephanie Seneff:

That's great. Congratulations.

Dr. Joseph Mercola:

Hopefully, you can get at least into over 60 because you've got a nice low latitude there and lots of sunshine.

Stephanie Seneff:

Right.

Dr. Joseph Mercola:
All right, well, thanks again for everything. Appreciate all your help.

Stephanie Seneff:
Thank you.

Dr. Joseph Mercola:
Keep up the great work.

Stephanie Seneff:
Thank you. Same for you. I really appreciate all you're doing for the cost. Really great.

Dr. Joseph Mercola:
Any other insights you want to share with us, just shoot me an email.

Stephanie Seneff:
I will. Okay, great. Bye.

Dr. Joseph Mercola:
Sounds good. Bye now.