



EVERYDAY IMMUNE RESILIENCE

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I'm going to go over immune resilience, some strategies that we have to support immunity and so forth. So let me just talk about some brief things. When you try and look at supporting your immune system and your immune resilience, one of the biggest things that people forget to do, is that they forget to really remember the things in lifestyle that make the biggest difference. So sleep, hydration, movement, exercise, those things are really critical. So I put together a free immune resilience program [Everyday Immune Resilience], it's at Dr. K News, drknews.com, and if you click on that, you'll see the free online immune resilience program [Everyday Immune Resilience], and it goes into those strategies. It's free, we're not trying to sell anything. It's just some information there that can really help you.

I think what's happening right now is that a lot of people are home, they're depressed, they've kind of changed their diet, they don't care, they're in a state of depression, they're not doing things, and these things really have a negative impact on their immunity. And if you're really worried about their immune system, you really want to focus on some very basic things like definitely getting proper sleep and so forth. So the immune resilience program [Everyday Immune Resilience] [on drknews.com], goes into all those things.

Thank you for all the comments, I hope everyone's doing well too. Thank you for joining us. If you guys have any questions, I'd be happy to answer them, as we go through this.

So, the basic concepts of immune resilience, and the key thing with how things work with the immune system and viruses is, there's something in the field of immunology called natural killer cell activity. And natural killer cell activity is an immunological test where, when a patient submits blood, you pull those out. And these natural killer cells, they're really what fight viruses. So, one of the things that we used to do in the clinical setting all the time, and it's still available with some labs. like Quest, is a test called natural killer cell activity. And what they actually measure is how effective your immune system is to kill a pathogen. Natural killer cells are used to fight viruses, and they're also used to fight malignant tumors and things like that.

There's some people that have normal white blood cell counts, but their natural killer activity would be really depressed. And that's not uncommon to

see that people who have autoimmunity. So there'd be some of those issues that we know, that that can take place. And those things can take place from just too much inflammation, too much free radicals, too much chemical exposure, with just a weakened immune system.

The things that we talk about in the immune resilience program [Everyday Immune Resilience] — getting proper sleep, and doing things like that, really help support things like natural killer cell activity. We also know that when you're trying to deal with a virus, and you're trying to deal with autoimmunity, natural killer cells are not only cells that kill viruses, but there's some research that shows that natural killer cells also really help with immune modulation.

And when I was working with autoimmune disease patients, and we're doing lots of comprehensive profiles in my earlier parts of my career where I was really just trying to figure out, what do I really need to look at that's really important with patients of autoimmunity, what's the indication that they're getting better, the interesting thing was that their natural killer cell activity improved despite their autoimmunity coming down.

So more and more research is really showing that natural killer cells don't just fight infection, but they also modulate the immune system. So we know we can look at total white blood cell counts. If your total white blood cell count, if you've ever had a complete blood count or CBC on a routine blood test, that's a good indication of your general immune function, but even at a subtle level, we can see that these natural killer cell activities can be off with certain people, even though their total white blood cell count is normal.

When you read stories about people on the press, where they stay that “this person was relatively healthy, and then they had a complication, or died from things like coronavirus,” one of the possibilities is that they may have not had actual full blown disease, or a pulmonary condition, but however their natural killer cell activity was very low. So again, that can happen just from chronic inflammation, chronic environmental triggers, and so forth.

Okay, so let me take a look at the questions, and see if I can answer some of them. Thank you all for joining. Thank you everyone for the positive feedback.

Jackie. Hi doctor. I've been following your 3D Program for about a month, and I have along, with guidance from a functional medicine doctor. My intolerance seems to be improved gradually, but limited to tolerate supplements.. is somewhat limited. In your opinion what

Apex supplements should I try to do first or most important? I'm only taking digestive enzymes, at this moment.

So if you're in the 3D Immune Tolerance Program, that's a program that we developed, and the 3Ds stand for distinguish, down-regulate, and diversify.

And those are the three principles you need to support your immune system if you're overreacting to foods and chemicals, or have autoimmunity. If you want to learn more about it, you can go to drknews.com. But in the 3D Immune Tolerance Program, let me explain something.

The immune resilience program [Everyday Immune Resilience] we put together, during this coronavirus is a free program, where I can teach you the basic concepts about lifestyle.

The 3D Immune Tolerance Program, if you're not familiar with the work we do, that's a program, I think it's about \$130 or something, but it's a program with lots of videos and recipe guides, and books, information, and checklists, and workbooks, that you can really work through to really support your immune system, from the concepts of diversify, distinguished, down-regulate. In that program, you should see specific supplements that you can use.

So, Jackie for as far as your question goes, I just say, look at the program, they're very much listed there.

So we know that when you're trying to improve your immune tolerance, things like butyrate, short chain fatty acids, are really, really important. Vitamins like A and D are really critical, taking supplements to support biotransformation — how your liver clears out chemicals and environmental pollutants, is really, really important. So it goes into all those concepts.

Okay, great. Let's see what else we've got here. Any more questions? Now, the other question that typically comes up is, **when you're looking at immune tolerance issues, and immune resilience issues and autoimmunity, what supplements do I take? What kinds of things do I do?** And I think for the most part, the key concepts are, you have to do the lifestyle factors first. Lifestyle factors are getting adequate sleep, getting some type of motion/movement. And one of the key things to also is just to be happy, just to be healthy, have healthy conversations, communicate with people.

Those are critical for your immune system as well. When they do animal research, and they try to cause depression, and even sometimes immune

suppression, and even research where they're looking at how the mind impacts the immune system, what they do is they isolate animals, and they put them in a cage, and then they can see that they're getting into a state of what would cause depression, and their immune function goes down.

So this social distancing concept, is really important for us from a public health perspective, but if you are social distancing, one of the most important things that you can do, is to have interactions and communications. And also, even though you can talk on the phone, FaceTime and looking at someone's face has a different impact on your brain and your immune system.

One of the things that is important to know, is that when you look at the neurology and the neuroendocrine immune approach, just a person smiling, a person just talking to you, nonverbal feedback, has a profound impact on your state of being, your immune function, and your brain. So it's really important if you haven't been communicating with friends to step out, do some actual FaceTime with people, and get that nonverbal cues back and forth, to really help you with your immune system.

The other key thing is, I would really encourage people to look at positive news. There's actually links where you can only watch positive news, and hearing stories of how people help each other, and how people support each other, and great things that have happened to people have a really profound impact on the immune system, and immune function.

For myself personally, from a long ago, I just shut off all the negative political stuff. It just wasn't helping my physiology in any way. I pretty much just focused on what things really impact my overall health and function, and watching politics all day was not supportive of that, and at the same time, making some effort to really watch things that are really positive, make a huge impact on your physiology. If you can look for positive things that is pretty important. When they also look at studies that causes the most stress on people, it's being put in a situation where you personally can't do anything about it.

So if you're constantly focused on situations where you personally can't do anything about it, that really adds to your stress, and to your immune suppression, and to your immune dysregulation, and to your immune function.

It's really important to just really focus on having time with your family, or having time to actually do some things, and really think about the positive aspects of what's happening with the social distancing efforts we have.

Without question, it will have a profound impact on your physiology, and your mood, and your health.

The worst thing is just to focus on all the negative aspects of things, and constantly watch negative news, that will really just plummet your health. And if you are a person that's vulnerable, and dealing with autoimmunity and things of that nature, then you really want to pay particular attention to those types of things as well.

That's really some words of encouragement. And then also the other things to really think about is, how important it is, if you do have social interaction, research shows that just touching another human being, or touching an animal, or a hug or petting an animal, has a profound impact on your immune system and your physiology. So, sometimes it's just important to give a hug, take a hug, pet your animal, interact. Those things have a huge impact on the immune system.

I think one of the major problems we have right now is that the social distancing impacts the stress that it's causing from isolation. The lack of communication, lack of interaction people that are having with each other, can really have a significant impact on our overall wellbeing, and our overall state of function. Those are things to think about.

Now, some of the questions that are coming in here ... Diana, **how important is chlorophyll in boosting the immune system?** Well, chlorophyll, if you're looking at... chlorophyll is the plant green antioxidant substance in plants. Chlorophyll is a very good anti-inflammatory for people that have significant intestinal inflammation... it has flavonoids that can help heal inflammation in the gut. But as far as boosting your T cells and B cells and natural killer cells, it's not the most powerful thing to take.

But sometimes, one of the things you have to understand is, whatever your body is dealing with, whether it's an autoimmune disease, or an infection, or an intestinal inflammatory response, that's going to have some impact on your overall immune fitness. So if you're gluten sensitive and you eat gluten, and your gut gets inflamed that intestinal inflammation takes away from your immune status in general to some degree. So I would say if you have lots of intestinal inflammation, and you're asking about chlorophyll, chlorophyll would be a pretty good strategy. If you're just trying to boost your immune system, the best thing is actually sleep and so forth.

And then the most common vitamins are A, D, vitamin C, that's pretty well known, and then also there's lots of different botanicals. The highest amount of research with respiratory disease is on echinacea, and then taking

antioxidants like pomegranate extract, or general guidelines that people can use to kind of supports the immune system.

We don't really know of specific immune related protocols for coronavirus, but it's really the same when you look at all viruses from a natural medicine approach. When someone has hepatitis B, or someone has an active cytomegalovirus, or someone has Epstein-Barr virus, and they have an acute attack, it's not like there's this specific botanical approach for each one. The goal is just really to improve immune function and natural killer cells, and T cells and so forth.

Let me go into some other questions that we have here. Susan. **I have very low TSH but also very low free T3, T4. What impact might this weird combo have on my immune resilience?** Having low thyroid hormones will have an impact on immune function, to a high degree. Every single immune cell in the body, whether it's regulatory T cells, cytotoxic T cell, natural killer cell, B cell, neutrophil, dendrocyte, monocyte, they all have receptor sites for thyroid hormones. So if you are in a low thyroid state where you're actually having low T3 and T4, if you're having it with the low TSH, that's really what they call a pituitary pattern. The pituitary is not working well. So it can't activate TSH release and then if you don't have proper TSH release, then T3 and T4 levels drop.

Those are typically caused by significant stress responses, or from an ongoing infection, and there are some medications that can do that as well. But any type of low thyroid deficiency state has an impact on the immune system overall.

We know that thyroid hormones have a modulating impact in the immune system. So when people for example, have Hashimoto's hypothyroidism and they finally get diagnosed with hypothyroid, when they first go on thyroid replacement, they typically feel a lot better. And they feel a lot better mostly because their inflammatory response, their immune system starts to calm down and modulate their autoimmunity. And after a few weeks their immune system is kind of adapted, and then they still end up with thyroid symptoms because they still have this underlying autoimmunity that needs more than just some replacement, even though replacement is actually important for them. So having low thyroid hormones can impact your immunity.

Let me go onto the next question here with Deedee. **What parts does domestication of animals and CFO-sourced meat play in virus pandemics?** To be honest with you Deedee, I have no idea. So, I'm going to skip that. If someone can comment to your post that knows the answer, that'd be great.

Question from Gosiah. You're talking about being happy... less than two weeks ago, my dad died (I'm very sorry to hear that) Not of COVID, but in Poland. I live in the UK, my fiance lives in the U.S, I'm all alone here. I do my best, but there's only as much as I can do. Are there any supplements that could help me through the isolation?

Well, Gosiah, I would really encourage you to not really focus as much on supplements. I would really have you check out the immune resilience program [Everyday Immune Resilience], and think about those lifestyle strategies, they will have the biggest impact on you. The other key thing is, just trying to focus on the positive responses. And the other thing to remember, when you look at the psycho-neuro immune response is that crying is really healthy for the immune system.

Reflexively when we actually get into a point where we feel like crying, it's very important to cry, because crying releases opioids. Opioids have a profound impact on what are called regulatory T cells, and they modulate the immune response. Grieving is something that has to happen, and it is actually important to have that emotional response to come out, to really keep your immune system healthy as much as possible.

That's one thing. One of the things that I've seen in my practice over the years, the sickest patients I've seen are the patients who have not grieved, the patients who have kept emotions in, they've not let things out. And I've seen many, many of those patients develop autoimmune disease. In what they call the psycho-neuro immune response, how your thoughts, your emotions impact your health, and your immune system, is really an under addressed part of healthcare.

We all have things to deal with. We all have emotional things. The key thing is to let them out. It's important to know that having sadness and crying, all those things actually is a reflexive way that our immune system responds to help us heal, and help us to modulate our immune system. When you actually look at what's happening physiologically, when people are crying, there is such a high amount of opioids and growth hormone release, they really protect our body and support us. I would say I'm really sorry about your dad passing away, but it would be very healthy for you to just make sure you grieve and let all those emotions out. That'll probably be the best thing you can do more than any other supplement.

Maria, thank you for your nice comment. And then Gina, **on the hunt for my root cause, ruled out iron, adrenals, sex hormones, eating very diverse diet, autoimmune paleo, using the vegetable mash up mix**

that you speak about in your new videos, my CBC count is normal. CRP is 6.7, (Ooh, that's pretty high). **Homocysteine went up after three months of this type of diet, good sleep, etcetera, and I've been on Turmero-Resvero [inaudible] now it's 3.5.** Gina, it's really hard to really comment about specific protocols for any person through a Facebook chat. I can't give any specific clinical advice, I just don't know enough about your history, and your past labs, to even come close to commenting on it.

However, I will just say as a general concept, if your C reactive protein is 6.7, it doesn't necessarily mean anything, unless you have a CRP level before. If your CRP level before was eight, and now it's 6.7 then that's an improvement. So we don't necessarily know if you're getting greater inflammation. Your homocysteine went up, homocysteine may just be related to methyl donors, and you may need to add more folate, maybe tetrahydrofolate into your system. But also if your CRP went up, and your homocysteine went up, it's just an inflammatory response, and you can get inflammatory responses other than just to diet. I think one of the key things that happens to a lot of patients suffering from autoimmunity is they really start to equate "what I eat, and what supplements they take, should control my overall inflammation."

And that's true to some degree, but they're not the only factors. So having a stress response, not getting enough sleep, having an emotional response, those things can absolutely trigger the inflammatory response. So, you may want to look at are those factors in your health case that's happening? I recently had a case review with a new patient that was coming, and she was on, I would say over 40 different supplements, and she was already on autoimmune paleo diet, and her autoimmunity had really progressed the past year, where she started to have systemic autoimmunity and antinuclear antibodies and all these things really just go off the charts on her laboratory tests. And this all happened with her getting into a very difficult premed program at school, and [she was] not really sure if this is what she wanted to do.

And her question to me is, "What other supplement do I take? What other food do I restrict?" And the answer was, "There's nothing left. You're taking 40, 50 different supplements, and you're on a limited diet. How you're handling your academic program right now, is probably the biggest driver you're in for your inflammation and autoimmunity." So we recommended really focusing on strategies for that, before anything else. So, I would just say that if your CRP or inflammatory markers are going up, got to make sure that they actually are — that you have a baseline to compare them to. And if not, look at other things besides just food and diet.

I don't have any input about 5G and COVID, so I can't comment on that, Sahara. Let me go into Diane's question. **Should we wear a mask if we do not have the virus and go shopping for food? Can you explain who should wear mask and why?** I will tell you right off the bat, I'm not a virologist and I'm not an expert on COVID-19. However, we do know that there's a limitation in mask [numbers]. Technically if you can cover your mouth, that'd be great. But if you're coughing, they would require you to wear masks, as a public health concern. But if you can cover your mouth then you're less likely to touch your face, and get top droplet exposure. Again, I'm not the expert in that, but for myself, to avoid touching my face and at least cover it with a scarf, or bandana — I mean, obviously we have a shortage of masks, which public health people really need to have, because they constantly get their mask contaminated, they need to throw them away.

Let's go onto, Maryam here, **is taking zinc important during this time of antiviral?** Yup. Zinc is important. If you're zinc deficient, taking zinc can be supportive. Zinc could be another thing that is a general immune support, you can add to overall protocol.

Next question. **What is the impact do you think on 5G, and other forms of non ionizing radiation on human health?** For the general part, there is some impacts with electromagnetics and ionizing radiation on overall health. There's some people that are more susceptible to it than other people. I think there's going to be some uniquenesses, like I'll give you an example. People that have really issues with the electromagnetic EMFs or with ionizing radiation or 5G, in my experience have been people that have had traumatic brain injuries. And some people have traumatic brain injuries, their brain gets injured and the neurons are close to threshold.

So any kind of activity really makes them have some significant symptoms and issues. In my practice, over 20 years working with chronic diseases, what I've seen is when I see people that are extremely, extremely sensitive to EMFs and so forth, we usually see a pretty significant brain injury, or a neurodegenerative process, that is really impacting their overall health.

When you look at EMFs, they have an activation of causing some depolarization from exposure. And that only happens when neurons are unstable. So, I think for people that have some degree of neurological injury, or neuron injury, or compromise, they can be very, very sensitive to EMFs, more so than others. As a clinician, whenever we see that extreme degree of sensitivity, I do very detailed neurological exam, and detailed history, to see if there was any issues with the brain.

Okay. I can't comment on any drugs Lyla, I don't have any significant training experience with that. I can only talk about diet, nutrition, lifestyle. So, let me skip that question here.

Let me ask Maria, **how about coffee for us with Hashimoto's? Coffee!** [lifts his coffee mug to show the viewers, and smiles], First of all, I hope you notice that the key thing is to not drink out of a plastic lid. Plastic and bisphenol A has a significant impact on immune function and autoimmunity. I published a paper on this in the Journal of Autoimmune Diseases. We did a literature review on how BPA can really trigger autoimmune diseases. And then we did some followup studies and research where we found people who react to bisphenol A also have high correlation with having neurological autoantibodies. In some research we've done, but we haven't published, we found the same thing with thyroid autoantibodies as well. The first thing I think about when I hear people that drink coffee is are they drinking it through a plastic lid? And if they're drinking it through a plastic lid, that is not an ideal scenario.

That's one thing. There's also a study that was published at the Harvard School of Public Health, where they looked at people that drink canned soups every day, and they measured their BPA levels, their bisphenol A levels, over several weeks. And they found that their BPA levels dramatically went up by having canned soup everyday, because canned foods have BPA lining. Coffee cups also have... these plastic cups you use also have BPA lining. And when you drink coffee, especially when it's hot, the heat exposure to BPA causes BPA to be released into your liquid. So one of the things that we see with the coffee drinkers and people that have autoimmunity, especially if they're going out to a coffee store and getting a coffee cup lined with BPA, and with a coffee lid, and they drink it, it's not just the coffee that's the problem, it's really the bisphenol A. So that's one thing to be careful about.

Now, as far as other things with coffee is that coffee is a stimulant. So for people that really have adrenal exhaustion, they're barely hanging in there, they may not be able to tolerate coffee just because of the stimulant aspect, but for the majority of people coffee has flavonoids that offer lots of neuro protection and overall immune function and protection as well.

So flavonoids in coffee have a very profound antioxidant effect, and some of the components in coffee bean also have been shown to help the gut microbiome bacteria to function better. There's been numerous publications now on coffee showing neuro protection against things like Alzheimer's disease and Parkinson's disease. So there are some benefits to drinking coffee, that are important.

Now, for someone who's got hypertension and has high blood pressure, drinking coffee is not going to be a good thing for you because as your blood pressure increases you start destroying your vascular endothelium and you start to injure your arteries and you have higher risk for strokes after having consistently high blood pressure.

If your blood pressure isn't high, and coffee's not too much of a stimulant for you, then there's lots of benefits of drinking coffee. I remember, a few years ago I was really questioning this myself. So I spent two full days, just trying to read as many studies I could see that was published on coffee, and its impact on health and immune system. And pretty much all the papers that were published were on the positive impacts on coffee, and the impact on health prevention. Of course, there's concerns again for stroke, for high blood pressure people and people that can't handle stimulants.

Now, there are a subclass of Hashimoto's people that cannot handle certain flavonoids and immune function. And some patients that have Hashimoto's will know that they cannot tolerate coffee, and coffee actually does have proteins in it, and coffee bean proteins are in your liquid when you drink them. And some people do react against coffee bean proteins, and that's different than flavonoids, the antioxidant content of coffee.

So there's a flavonoid component and then there's a protein component of coffee too. There are some people with autoimmunity that are extremely sensitive to the protein and they'll just notice it. So they'll have like rheumatoid arthritis if they drink a cup of coffee, and then all their joints hurt, and their body hurts, and they just know they can't do it. So be aware of that response.

And then there's some people who have a hard time metabolizing caffeine that have acetylation methylation issues, or they can't clear caffeine up very quickly, and they'll just get stimulated very much. There's also a very small set of people with autoimmune that just can't handle any TH2 support, so they also have adverse effects to coffee.

I would say the majority of people however, that do have Hashimoto's, to answer your question, Maria, can tolerate coffee, and it does offer them some anti-inflammatory effects, and provides them some protection. However, if you drink coffee and you just notice you don't feel well, your body hurts, you're not functioning well, you definitely want to avoid it. However, that's not very common. But it does exist.

Okay. Elise, next question. **If you eat foods that you have a known sensitivity to, won't that increase inflammation and lower your immune system... taking healthy foods from a food sensitivity test?**

Yes, you're absolutely right, Elise. If you eat foods that you have an immune reaction against, you're going to create an inflammatory response in your body, and that inflammatory response is going to cause you to get tired, fatigued, cause your muscles to hurt. It's going to shut down your mitochondria in your body that produce ATP for energy, that's why you just don't feel as well. Can't think and focus, and function as well as you can, and then it has some toll on your overall immune system as well.

So, depending on the severity of the immune reaction, some people will eat foods and have a slight immune response, and their immune system still is intact and they just have inflammation. And some people, for example, someone with celiac disease and they eat gluten, their entire white blood cell count can just plummet, if they have a significant response to a food protein. So there's different degrees of immune reactions for people that have food sensitivities, but for the most part, you really want to avoid foods.

What I'm seeing happen now is people are just depressed at home, because of social distancing, and just eating whatever they want. And that's the worst thing you can do, especially if you have autoimmunity. Just some

Okay. Now let's go on to the next question. Karen asks, **what is too low for homocysteine?** Thank you. Karen, I mean homocysteine is a marker, and I don't there's been an established low range for homocysteine in research circles. Obviously you need to have some degree of homocysteine to function well. So you can have different people, especially people that are really into methylation parts of functional nutrition, and give you different commentary about homocysteine. Homocysteine, for you guys that don't know, homocysteine is a laboratory marker, and is found in your serum. It's an amino acid and you have to be able to transfer what are called methyl groups, which are one carbon groups, to properly methylate and transfer carbons to different biochemical processes.

And when you can't do that, then this marker called homocysteine, that depends upon methylation to be converted down the cysteine, isn't working. And when that happens, lots of things in the body go wrong. And you get things like depression, and risk for certain diseases and so forth, and body inflammation. But the question is you "should have some degree of homocysteine". The problem is we don't have the correct research to show us what a low end range is. So, that's all I can really answer with you.

I think there are a lot of speculation with what homocysteine [levels] should be. Obviously we know if it's above 10, then that's a significant inflammatory markers and some research that have shown that homocysteine levels above seven even, can start to cause some neurodegenerative changes even though it's within the laboratory [reference] range. So that's the best I can do to answer that question.

Okay. Lisa, **how do T cells work with no B cells? My infusion treatments for autoimmune encephalitis knock out B cells, but it does not affect T cells.** You're probably getting a monoclonal antibody [test], which targets specific proteins on B cells associated with autoimmune diseases. So that just prevents the antibody... let me explain T cells and B cells really quickly to people.

When you have a pathogen come into your body, your body is not very effective in finding it, especially a virus. What immune system needs to do, it needs to make antibodies that can then bind to the pathogen, or cells within your body that have the pathogen in them, and then once the antibodies are bound to those tissues then immune cells called T cells can come in and destroy that right away. So B cells, antibodies don't really destroy anything, they just tag to pathogens to cause an immune response.

The key feature of autoimmunity, is that your body makes antibodies instead of to pathogens, to your own tissue. And when that happens, you can have your immune system attack your own body with the T cells. So, if you're taking a monoclonal — there's new class of drugs that people get different ways through infusion, for example, where they make a specific binding protein, what's called monoclonal antibody, to a specific region of the B cell. And that's been effective for certain autoimmune diseases, to calm down the inflammatory state. So, if you're taking a monoclonal antibody infusion, it shouldn't have any impact on your T cells, and you should see that with the lab work if those are being conducted on you on a regular basis.

Okay. Let me get into some next questions here. I lost my place, I'm sorry. A question from Kelly. **I have Hashimoto's, pretty well managed, feel good, but pesky TPO antibodies around 180, but I almost never get sick. Does that mean my immune system is hyperactive, too vigilant? Does it give me any clue about autoimmunity?**

Some people with autoimmunity, they just don't get sick all the time, their immune system is really, really active. That does occur, we see that in a clinical setting all the time.

People come and say, I haven't had the common flu in five years, 10 years, it does mean your immune system is really overactive to some degree. It can offer you some protection, potentially get some pathogens, but we don't really know if it's good or bad, my gut feeling is, you probably have an overactive immune system, and from an autoimmune perspective, that's not the best approach. You still want to dig deeper.

Deedee: **is butyrate not good with someone like SIBO conditions.** For those of you guys that don't know, butyrate is a short chain fatty acid. And your body normally makes the short chain fatty acid called butyrate when you ingest fiber. So when you eat fiber sources like the fibers found in vegetables, you've got bacteria that convert that into something called short chain fatty acids. And then butyrate being one of the most predominant short chain fatty acids — then butyrate then helps supply fuel to your other good bacteria, that then allow them to function better. And it also has been shown in some research studies now, to cause tight junctions to regenerate. So if you have leaky gut, it helps you heal. So that's the fiber connection with butyrate.

What happens with people that have small intestinal bacterial overgrowth, is they have a condition in which their intestinal tract actually has lost its ability to conduct motility, contractions. And these intestinal contractions also control valves of the gut, the main one being above between the small and large intestine. And when that valve and intestinal motility gets compromised, bacteria that's normally found in the large intestine moves across into the small intestine. And that's what's called small intestinal bacterial overgrowth.

It's not an infection, it's just really bacterial movement from the large intestine to the small intestine, because the gut muscles are not working properly to cause the constriction and prevent that passage of bacteria from the small to large intestine. And when the bacteria from the large intestine gets into the small intestine, those bacteria are really, really, sensitive to sugar and starches, and when you eat any kind of sugar or starchy food, people notice immediate distension and bloating after consuming those things. So researchers figured out that something called a FODMAP diet, which avoids fructose, oligosaccharides, disaccharides, monosaccharides, polysaccharides. When they avoid those types of foods the bloating goes away, because those types of foods don't have the sugar sources that feed the bacteria.

But if you don't eat fiber and have those foods, then your microbiome can really be compromised. So to answer your question, one of the best things that you can actually do if you have small intestinal bacterial overgrowth is

to take exogenous butyrate. Butyrate will help calm down intestinal inflammation, support autoimmunity by supporting T-reg cells, help tight junction proteins. As a matter of fact, the very first supplement I use with patients with SIBO to control their immune system, to modulate their immune system, and to really help their inflammatory response come down, is butyrate. So, to answer your question, you definitely want to take some exogenous butyrate supplements if you have SIBO. As a general rule, there's always specific people who may not be able to tolerate them or can't tolerate, have issues with it, but for most people who have SIBO, butyrate would be a good idea.

Peter, **can essential oils be helpful to increase our immunity?** I would only guess that they would be helpful... I don't know of any significant research published that shows essential oils impact immune function, but I haven't really looked for it, so my only guess would be that they would have some positive impact, but I don't know the specific mechanisms, and what's been published on it.

Dana **as a mental health therapist, I so appreciate that you just shared about grieving process.** Well, thank you. Thank you Dina, and it is absolutely true. The most neglected part of dealing with autoimmunity and inflammation and stresses isn't food restriction and supplements. There is a profound psycho-neuro immune response.

Next question from Laurie. **My legs are feeling really heavy, achy and weak. It's just stress and the impact of my thyroid. I feel good otherwise, other than exhausted from my work at home situation.** Well, thank you for sharing that, Laurie. I hope you feel better. At times, sometimes you just need some motion and movement to change your inflammatory response, and achiness and weakness. Sometimes it's counterproductive, if you feel really weak and tired and exhausted, and your muscles start to ache that, you can't handle moving. But as a matter of fact, one of the key things that breaks that vicious cycle, of that inflammatory cascade from being sedentary and turns on muscle mitochondria to start to activate and produce energy to make your muscles feel good, is actually movement. You have to start slow, but if you're feeling a lot of weakness and achiness, sometimes doing a brisk walk or something can have a huge impact on the metabolism taking place in your muscles all together.

Okay. Next question. **What do you think of taking transfer factor multi-immune system by which nutrition goes to boost natural killer cells, in the presence of autoimmune disease? Can this cause a flare up?** Deborah, I'm not sure with the supplement is that you're referring to, but it sounds like it's a general immune booster, but probably has lots of different

immune enhancing botanicals in there, and it can absolutely flare up autoimmunity for some individuals. So some people that have autoimmunity — when they are having an autoimmune response and they take supplements, that increases their natural killer cell, or T cell responses.

They can definitely have a flare up. You really want to kind of look at where your autoimmune disease is. So if it's in your thyroid, and it flares it up, you would get anxiety, you would get symptoms of hyperactivity, so your metabolic rate would go up. You may have increased bowel movements, you may have anxiety, heart palpitations, nervousness, a little bit of tremor. Those are all signs that if you take, for example, if you have Hashimoto's, and you take an immune enhancer, that it is actually stimulating your autoimmune response.

On the other hand, if you have something like rheumatoid arthritis, the symptoms that you would have from the autoimmune system flaring up would be inflammation and swelling in your joints. So let's say you have a person taking an immune enhancing supplement, when person has Hashimoto's, and one person who has rheumatoid arthritis, Hashimoto's persons may notice they can't sleep anymore, they're getting anxiety and nervous all day when they started taking that supplement. But the person suffering from rheumatoid arthritis may just notice that their joint swelling has become worse as they started taking the supplement. And it could be subtle, it doesn't always happen a few hours after you take it.

For some people they'll notice it the second day or third day after they've taken it, they just starting to notice the symptoms. If you have that reaction, it'd probably be a good idea for you to stop.

Let me get into the next question here, Cassandra, **what might you recommend for someone dealing with SIBO/IBS? The diet is very restrictive, and having histamine reactions to various foods, but really want to diversify as you suggest. My last reaction was pretty intense, I like to try the mashup mix to build immunity, but I'm anxious to do so. Trying to avoid histamine ER visit.** Well, again, it's hard to be specific about commenting about what foods you should or should not take as an individual. But as a general concept, here's one thing that I've seen. What I've seen happen in the autoimmune world, is people go, "I can't eat gluten and I can't eat dairy, and I'm the autoimmune paleo, ... but I can't eat histamine foods." And then pretty soon their list of [prohibited] things really just gets bigger and bigger. And then they absolutely lose their [microbiome] diversity.

I would say that even though some people cannot handle histamine related foods, it's really rare that people can't handle proteins that have the amino acid histidine, and you could be one of those people, but it's not uncommon, however, if you are completely avoiding all foods, because you're on autoimmune paleo, you're off all grains, and you're off all histamine foods, you're not barely eating anything, your gut microbiome will literally disappear. Research studies have shown within a few days when you completely cut out diversity of plant fibers in your diet, your gut microbiome will change. And it's pretty clear that when the microbiome shrinks and you lose the bacteria diversity from eating a diverse diet, autoimmunity will absolutely flare-up. And that was really the whole point of me trying to put together the 3D Immune Tolerance Protocol, because I really saw a disconnect, with what was happening in the autoimmune world.

What was happening in the autoimmune world of functional medicine, nutrition, natural medicine was there was so much restriction, and not enough diversity, and you would just see patients just get worse and worse. So you definitely want to really consider the Veggie Mashup, we talked about in the [3D] Immune Tolerance program, really diversifying your diet and following some of those recipe guides we have in there about doing so.

Let me try to answer the next question. **What are your thoughts on LDN and autoimmunity?** Low dose naltrexone is one of the few medications that has some positive impacts with patients of autoimmunity. My experience has been, with low dose naltrexone, that when people have autoimmune and they take it, there is let's say, 50% who notice some benefit to how they feel, and 50% who don't notice any benefit of how they feel. But for the 50% that do notice the benefit of how they feel, we do see that over a period of time they don't really notice much difference at all. And even when they stop taking it, they don't notice much of a difference.

I think if I had autoimmune disease myself, I would consider LDN, if I had an autoimmune crisis, but taking every day, I don't know if it would serve me well because one of the things about LDN is with all types of immune modulating drugs, there's the thought that naltrexone has a binding effect on regulatory T cells to modulate autoimmunity, is that the immune system adapts to whatever you give it, there's a point that it loses its effectiveness. So, if it was me, I would just use LDN from an autoimmune crisis. However, some people notice benefits of LDN and they take it daily, and take it regularly, they function better with it. So there's some uniqueness and personal approaches to that as well.

Let's try to go onto the next question here. Thank you for kind words everyone. **Can you please talk about the possible cause of post sexual**

contact UTIs? I really can't, I don't have enough experience clinically to talk about that. So let me skip that one though.

Do autoimmune sick people want to upregulate, or downregulate cytokines during COVID-19? That's a very general question. Cytokines, some are anti-inflammatory, some are proinflammatory. I think the key thing with looking at cytokines in immune prevention is just having some degree of balance. Remember that when you're trying to fight an infection you have to have some inflammation to fight the infection, and then you have to have anti-inflammatory response to calm it down. So I think it's way too early to start thinking about what cytokines should be upgraded or they're downregulated for any kind of virus, specifically COVID-19.

Question from Sherrilyn. **I just want to say thank you.** Well thank you. **I started with your food protocol before it was autoimmune paleo, between that lifestyles change and supplements, I am back among the living and enjoying life, and are all back normal range. My TSH back in the normal range after having my TSH over 73. [CRP 00:49:02] of over 11, positive ANA slowly working on lifestyle to reduce supplements. Now I found your Doctor K. News 2011. I wouldn't be here I am today. We can get there. I'm sensitive, so I know what I cannot cheat on. Thank you again. Keep up the great work.** Well, thank you. Mom Lady Sherlyn, for your story and feedback. I think, for me it's so nice to hear a positive outcome.

I think for many people that are scared with autoimmunity and especially autoimmunity and coronavirus, it's really nice to hear people share some stories. People need to know what's possible, and it's, just encouraging to hear that, and thank you for sharing that with us.

By the way, my coffee lid is made out of glass. Someone asked if it was plastic. No, this is actually by a company called Tupkee, and my great friend Dr. Mark Flannery, bought this for me, and I was very appreciative of it. It's just a great way to drink coffee without it having the plastic issues.

Gina. **Probiotics. If lactic acid producing bacteria are giving bad symptoms like brain fog, dizziness, etc., should we continue those probiotics? I tried .. once. Thank you.** Most of the probiotics that people are taking ... are considered beneficial bacteria. However though, if you're taking a probiotic and you're noticing some differences in your symptoms then you should definitely stop. And it may not just be the probiotic, it could be the stabilizing agent in the probiotic that's causing an issue with you. So be aware of that, and sometimes even just the gel capsule that sometimes

they use for probiotics could be a factor that may be causing some symptoms.

One of the interesting things that's happened with the human microbiome research that's been happening — there's been a huge effort in the past 10 years to really study the microbiome — what they found is that they can't necessarily find the best strain of positive bacteria. And what they've actually ended up concluding is that bacteria work with each other in patterns. You can have one bacteria that expresses protective responses with other bacteria, and one bacteria that can switch to being pathogenic with other bacteria that are present. And it's really more complicated to the point where they're going to have to use machine learning to interpret microbiome panels, to look at all the different bacterial species.

And we also know that how a probiotic responds to you may be totally different in another person, based on your preexisting bacteria in your microbiome altogether. For myself, I found I just have not been using as much probiotics in my clinical practice as much, because for some people it just doesn't have any effect, and for some people it's very expensive, and you don't get much results.

I'd rather do things like the veggie mashup that we talk about in 3D Immune Tolerance Protocol, to really give them a diverse list of vegetables every day, to really improve their own bacteria. Because vegetable fibers are prebiotics and they can actually help you make your own bacteria and your body can use that to make what it needs to. And even using things like butyrate, short chain fatty acid supplements to make the biggest difference.

Let me go into the next question here. Turga. **do people ever get metallic metal tastes, when they get infected?** I'm not sure about when they get infected what that means, but one of the most common causes to having a metallic taste in your mouth is from regurgitating bile. One of the most overlooked gastrointestinal conditions people have out there, especially in women, more frequently in women especially if they're older than let's say age 30, 40, that age group — is that they end up with a gallbladder sludge or actual gallstones. And one of the things that happens when that takes place is that they get some abnormal bile release, and that bile regurgitates back, and they get that metallic taste in their mouth.

So if you're getting a metallic taste in your mouth and you're also noting that if you eat fatty foods, you get a little bit bloated or distended, or you're really burping after fatty foods, or you can't tolerate taking things like fish oils without getting bloated and distended, can't handle fried foods without

feeling bad, that's a strong indication that you may have a subtle gallbladder problem.

And when I mean gallbladder problem, let me explain what that means. One condition is gallstone obstruction, which will cause immediate symptoms, and pain in your back and shoulder, and you know there's something wrong and you got to go to the ER, and deal with the obstruction. But another common issue — gallbladder issue — before you get a gallstone obstruction, you get the first condition which is called gallbladder sludge. And the actual term for it is gallbladder sludge. It's not an alternative medicine term. It's a term used in conventional healthcare. And you can actually see that with abdominal ultrasound. You actually see the bile and the gallbladder thickening. And then sludge is a condition before we develop gallstones. And then eventually that sludge is going to get into gallstones.

So, many people that have metallic taste their your mouth, and have intolerance to fats really have some of this gallbladder sludge, or gallstones developing. And then they're at risk for developing gallstone obstruction. But the key thing is that they're not able to efficiently break down fats, and when you can't efficiently break down fats, you also have issues with getting proper fat soluble vitamin absorption. So, one of the most common causes for people to not be able to get their vitamin D levels up, even though they take lots of vitamin D, it's because they have an underlying gallbladder issue. So when people have underlying gallbladder issue like gallbladder sludge, and metallic taste in their mouth and bloating and distension, we'll see they get very low in vitamin A, D, E, and K, their vitamin D levels drop, you can see that in their blood tests and vitamin K levels get really low, you'll see the platelets very low, on blood work as well.

And when A, D and K levels, vitamins A, D, and K levels drop, you can have things like bloody toothbrushes, hair and nails that don't look as good as they used to, those are some things to think about.

Okay, next question, Rebecca. **I have Crohn's, which has been in remission for six years, I'm not taking any meds, I also get rosacea, which has improved, but I cannot get completely, can you advise on this?** So I can't really specifically advise on your protocol for Crohn's. When you look at autoimmune disease, it's a personalized approach. 100 people suffering from Crohn's and rosacea, may have completely a hundred different triggers, and lifestyle factors that it's promoting their autoimmunity. The only thing I would suggest is if you haven't checked out our 3D Immune Tolerance Protocol, those are some general good guidelines to help look at strategies to really impact, general concepts of autoimmunity with lifestyle and diet. So, I would advise you to check out that program, but

those are just general rules, and you may need to work with healthcare professional for really personalized approaches for managing autoimmunity.

Shelia, **how much coffee?** I don't know the answer to that. Obviously you don't want to cause insomnia, that would dramatically impact your immune system and immune function, and I think the goal is to try to drink coffee to the point you don't want to get wired, and can't think and focus, and have your heart rate go crazy.

Let me try to answer the next question here. Jose, **Dr. Kharrazian, other than aggressive gargling, stimulating the gag reflex and coffee enemas, what other forms of at home treatment can we implement to stimulate vagal centers in the brain? And where does meditation, bath, singing, humming come into play considering the anatomy?**

One of the things that I talk about in my brain book, *Why Isn't My Brain Working?* In that book we talk about issues of some people having chronic gut issues, and they have a brain impairment because your brain fires into your vagus nerve, and then your vagus nerve controls your gut motility and enzyme release, and so forth. So in that book, we talk about supporting that brain gut axis by gargling, and humming, and doing gag reflex on the tongue.

The way meditation and other types of therapies come in, and technically anything you do that activates an area of your brain that's not firing, can have an impact in your digestion, because you fire your cortex in your brain, and your brain and cortex fire down into your brainstem at your vagal centers. But gargling and gag reflexes, and doing a coffee enema, and then holding the urge to have a bowel movement, suppressing that bowel urgency with a coffee enema, are all things that impact the brain gut axis, and we talk about that in the Save Your Brain online course, and we also talk about that in the [brain] book. Thank you for the feedback everyone, thank you.

Let me go into the next one, Christina, **if we have autoimmune disease and eat only foods that show as non-reactive on food sensitivity tests, would be fairly safe? Autoimmune paleo hasn't worked for me and I'm considering doing this, thank you.** Well, let me talk to you about your question. Is getting a food sensitivity test back adequate for you to know which foods you can react or not react against? And the answer is yes and no.

There are different types of reactions to food. The most talked about reaction to food is a food allergy. And a food allergy is what they call an

immunoglobulin or IgE response, which is immediate. Most people that have IgE reactions know that right away, and avoid the food.

Now, the next class of food sensitivity which is more common, it's not an allergy, it's the reaction to food considered a food sensitivity. And those are measured with antibodies like IgG, IgM and IgA.

Now, the problem is you can have some labs only do IgG reaction to foods, but you actually have an IgA, or an IgM reaction. So whenever you go for testing, there's always some limitation by which antibodies are being checked by the lab. So in ideal world, you would have IgE testing for food allergy, IgG, IgM and IgA testing for delayed sensitivities, and you would have all of them and the lab would be a hundred percent accurate, and then you can see what food responses that you have.

And then if that's the case, then that would be great, and you would assume that the labs are 100% accurate. With that being said, you can absolutely miss some food reactions you may actually have even though you've had some food testing laboratory done. Now, for some people food testing is really important because they don't know what to eat and they're not sure what they're having reactions to.

And sometimes having a food profile really helps them kind of clue into some things they had suspected but weren't really sure about. So it does have a very valuable place in evaluating healthcare, to identify foods you may be reactive, but it doesn't completely rule everything out. The gold standard approach to food sensitivity testing is just to eliminate the food for a period of time, and then slowly introduce it and then see if you have a reaction. The classic elimination provocation diet.

Now, when you do that what's happening is when you're eliminating the food, your immune cells call mast cells — and they're just building it with histamine during your elimination phase. And when you have eliminated all those foods, these mast cells get really, really big. Let's say you were avoiding eggs as an example, because you suspected eggs could be an issue for you. So you haven't eaten eggs in 10 days. So at this point your mast cells are not reacting to eggs everyday. Like let's say, they were before. And these mast cells get larger and larger with histamine. And now let's say after day 10, or after a two week period, you introduced egg into your diet again, and if the albumin reacting portion of the egg protein, causes a reaction for you then you have this massive histamine reaction, and the symptoms should be much, much more obvious to you.

And that's the whole purpose of the elimination provocation diet, is you let your immune system rest, and then you provoke it. When you do an elimination provocation diet, the first foods you add in would be the most diagnostic, but as your mast cells start depleting histamine, then you lose your ability to distinguish which foods are causing reactions for you.

So I would say if you have a food sensitivity test profile done, there's some good clues to you to avoid those foods if they're causing symptoms for you, and if you're still not sure, then eliminate foods you suspect, and then add them back in and see if you react.

Now, one of the biggest mistakes that we're seeing with people that have autoimmunity is they get a food sensitivity test back and they show positive reactions to out of a 100 foods, 40 of them, or 30 of them. And when that happens that clinically means to us that it's not just some food sensitivities — that's how I interpret that as a loss of immune tolerance. So when you get a person that does their food sensitivity test back and most of their foods come back positive, or let's say a third of them, or half of them come back positive, the worst thing you can actually do is to then eliminate those foods that you test positive for and try to eat the new ones.

Because what's going to happen in exactly three to four months, is all the foods you're now eating in your diet, are going to have antibodies against them. The bigger issue is that you've lost tolerance. That's another key concept about immune tolerance.

And another major mistake I'm seeing happen in the autoimmune clinical world is people who are just avoiding everything they see on the test. In my practice, if I ever have a situation where a patient has let's say more than half the foods show up on a food sensitivity test, my diagnosis is they've lost dietary protein tolerance. Their immune system doesn't know how to distinguish friend from foe and what they're usually reacting to are the foods they're eating. In that scenario, I don't actually eliminate all those foods, because I know if I do, they're just going to switch to the new diet, and they're going to decrease their diversity of their diet, and they're going to end up getting worse.

So what I do is I look at the list of let's say half the foods they tested positive and talk to the patient and go, "Do you notice any symptoms specifically to each of these foods?" And if they say, "Yes," then we definitely remove them. But for a majority of the foods, when they're testing for half the foods on a food sensitivity profile with positive antibodies, I don't want to remove all that if they're having no obvious symptoms. So then what I do is I have them follow the strategies of the 3D Immune Tolerance Program, a

program, distinguish, down-regulate, diversify. And as they're following those guidelines, then we repeat the food sensitivity test, without really restricting all those foods, and see if they went from half their foods being positive, to maybe only 20%. If that's the case, that means their immune tolerance is improving. Many times, when I have patients come in and we do food sensitivity testing, we're really looking at, also not just what foods to restrict, but an indication of what their overall tolerance is.

We talk about that, in the 3D Immune Tolerance Program. I have a whole section on defining food sensitivity testing, and those concepts. Those of you who are interested in that, you can go to Dr K. News and check out the 3D Immune Tolerance Program.

Does taking LDN increase your immunity? LDN doesn't actually increase your immunity just seems to help with immune modulation.

Next question. **Please talk about CRPS/RSD.** I don't know what that means. One of the things I said before is I don't know how to read text, and I'm slow enough where you actually have to write out the word and then I'll be able to interpret the question. But if you can ask that again without the text, I can probably help, or I can tell you if I know.

Next question. Lynn. **I see another question regarding the vague nerve. I have been diagnosed with cough due to post-viral vagal neuropathy 10 years now. I've tried alternative treatments, but I can find over the years. Osteopathic, chiropractic, acupuncture, supplementation, meditation, any suggestions?** My first question is how did they even come up with the viral vagal neuropathy? That's very specific a diagnosis. So, I'm not sure if that's accurate. And then the other question is, my only suggestion is the suggestions we talked about supporting the vagus nerve in the Save Your Brain course, and in the brain book with like gargling and gag reflexes and just overall improving your brain function.

Does eating gluten cause a flare with Hashimoto's? YES. Eating gluten for a majority of people with Hashimoto's causes a flare-up and sometimes that flare-up is very subtle, and sometimes a flare-up is very obvious. The genotypes of celiac disease and gluten sensitivity are similar. There's a HLA-DQ genotype, there's HLA-DQ1, HLA-DG8, and they overlap with gluten sensitivity. Several studies have shown that people that do have Hashimoto's, and these gene uniquenesses, when they go on a gluten free diet they actually have a remission and they feel a lot better. There's an extremely small, and rare group, that somehow everyone thinks they belong to, that have Hashimoto's that think they can eat gluten. But it's pretty unrealistic. When you have such overlap between the genes of gluten

sensitivity and celiac with the genes of Hashimoto's, more than likely it's going to be an issue.

Next question is, **does Hashimoto's cause essential tremors?** Let me answer that for you. One of the most fascinating things that has come out in the research with Hashimoto's — and by the way, if you guys are healthcare professionals, I am teaching a course on all the updated research and clinical approaches to Hashimoto's, from the kharrazianinstitute.com in May, and [due to the COVID situation] it's just via live streaming, and on demand [afterward] — and if you're a patient, and you're okay with medical terminology, you can also check out the course, but it's really on updated research Hashimoto's. But one of the most interesting things about Hashimoto's, to answer your question about essential tremor, is some of the cross autoimmune reactivities that are there.

So let me explain a bit what essential tremor is. When you look at tremor, there's different types of tremor. Like if you drink too much caffeine, you can get a physiological tremor where you just feel wired. And that has no rhythm, has no pattern, it's just from being too stimulated. That's a physiological term, it's not pathological. Then there's tremor that's found in Parkinson's disease and in Parkinson's disease, you have like a resting tremor. So when your arm is at rest, there's a tremor, and there's a phenomenon in Parkinson's called re-emergence tremor. So their arm is having tremor, but then when they put their arms in this position, it stops, and then it comes back. That's very classical Parkinson's.

Then there's another kind of tremor called essential tremor or kinetic tremor, and that tremor happens when you move your hand. It's not at rest like Parkinson's, but when you're moving your hand, especially if you're targeting something right before you get to the end, you get a little bit of tremor like that. And that is associated with cerebellum degeneration.

And one of the most interesting things about Hashimoto's is, they found that the antibodies, TPO antibodies, that are produced to diagnose Hashimoto's not only bind to the thyroid gland, but they actually bind to the area of the brain called the cerebellum. So when we think of TPO antibodies, TPO is the enzyme in the thyroid gland that helps to produce thyroid hormones, and that's the main part of Hashimoto's disease, that's the target protein for autoimmune or autoimmune Hashimoto's, but those TPO antibodies also bind to the brain.

So we see a lot of people that have Hashimoto's, that start to have early cerebellar degeneration. So they have a tremor, especially kinetic tremor, essential tremor, right before they touch the target, their fingers shake.

They have poor balance, they close their eyes, they start shaking and swinging all over the place. If you ask them to close their eyes and walk in a straight line, they can't do it. Those are all signs of cerebellar degenerative disease.

One of the research findings is that many people that have Hashimoto's do have this cross-reactive autoimmunity into their cerebellum, and have further degeneration there. So be aware of that. And also interesting enough, since gluten brought up, gluten antibodies have been found to bind to the cerebellum target proteins in the brain as well, that's a condition called gluten ataxia.

So some people that have Hashimoto's, they have both TPO and gluten antibodies binding to the cerebellum, and then they get significant vertigo, balance issues, and instability because of that mechanism. So those are some things to think about as well.

And a question by Amy here. **I read in your autoimmune diet to avoid grains and legumes, because lectins contribute to leaky gut. However, there are other experts that say that grains and legumes are needed because the fibers help to feed the bacteria in your gut. Have autoimmune thyroid and food allergies. I try to eat healthier and whole grains, beans are a current part of my diet. Should I be stopping?** The key thing with lectins, some people are sensitive to lectins with autoimmunity, it's not everyone. We just conducted a data analysis study that we're about to submit to a journal, where we looked at 400 autoimmune disease patients, and we wanted to see what percentage of them actually have antibodies or immune reactivities to lectin proteins.

And we found it was about 10 to 15% of the patients that have diagnosed autoimmune disease have immune sensitivity to lectins. And lectins are basically the protein portion of seeds. When you look at tomatoes, they have seeds in them, or egg plant, they have seeds in them. Those are foods they're very, very high in lectins. And lectins cause something called agglutination. So lectins are these proteins and they stick together, and when they stick together, they become new proteins that then become antigens, and trigger the autoimmune response.

So if you do have autoimmunity, you may need to be lectin free, but some people do not have lectin reactions. So there is some uniqueness in individual way to look at those. If you're not sure, you probably want to avoid lectins, you could still eat a high vegetable diet. And even in our veggie mashup protocols, we have that developed with a lectin free diet. So you can still diversify your gut without eating lectins, but you may or may

not have sensitivity that is likely to give autoimmune, it's not a general rule for everyone.

Kaylee asks, **so we're considered high risk for C-19 with autoimmune disease?** No, you're not. You're only considered high risk for any kind of viral infection, whether it is coronavirus, if you're immune compromised. Autoimmunity is not technically immune compromise, immune compromise being defined as immune suppression.

If you have an autoimmune disease, and your white blood cells are low, when you look at your total white blood cell count, if that's below the lab range, the lab range with most labs is usually like around 3.5 to 5. If you're in the 2.5 or 2.2 range, that's immune compromised. Some patients with autoimmune will have white blood cells that are low and some patients don't. So you really want to take a look at your immune panel, and get a clue that way, if you really have some of this immune compromised risk.

Let me try to get into another question. What does ANA about 300 mean? Everything else is normal. Different labs have different reference ranges for ANA. If it's outside the laboratory reference range, which sounds like it is for you, that means you have antinuclear antibodies, that means you have systemic autoimmunity. What that means is that any tissue in your body right now, could be vulnerable for an autoimmune response. And ANA antibodies, are highly associated with autoimmune diseases that impact joints, so having some kind of rheumatoid autoimmune disease is very common, and also having a systemic autoimmune disease like lupus, is part of the mechanism of ANA antibodies.

Next question from Deedee. **Is coffee enema good for moving bile sludge?** Again, not a lot of specific research on that, but we have found when people do coffee enemas... coffee, whether you drink it... let me put it to you this way. Studies have been done on coffee impacting gallbladder function and sludge, from just oral consumption. So when you drink coffee, caffeine activates nicotinic receptors of smooth muscles in the gastrointestinal tract and they cause your intestinal tract to contract more. That's why when people constantly drink coffee, they have regular bowel movements. But also coffee has been shown to cause the gallbladder to also contract the smooth muscles in the gallbladder [inaudible]. And coffee, has been shown to improve bile sludge.

So if you were just to look at the evidence and research published, one of the treatments were improving gallbladder sludge is to drink coffee. Coffee enema has the same effect, it's just a higher concentration of the nicotinic stimulation than before. So either drinking coffee or coffee enema would

activate those smooth muscles of the gallbladder. And when the gallbladder contracts more efficiently it breaks up the sludge and reduces the chance of developing stones.

Next question here. Question is from Cynthia, **would D3 raise platelets?** Not, no, it would not. Vitamin D is not going to raise your serum platelets if your serum platelets are low, the strongest indication, and from a nutrient connection, is actually vitamin K. So actually, as a matter of fact, one of the key indications that you may actually be low in vitamin K is if you have low platelets. Now, low platelets are caused by many things, and are associated with vitamin K deficiency.

However, if you have low platelets and no one can figure out why you have low platelets, and there's no medical reason for you to have a low platelets, one of the most common causes of that is just being vitamin K deficient. And one of the most common causes for being fat soluble vitamin deficient like K, D, A, or E, is to have an underlying gallbladder issue. Especially if you're female, it's very common, especially after age 40. I hope that answered your question.

Cindy Williams **is dark chocolate okay for people with Hashimoto's gastritis.** Yes. Dark chocolate is actually very helpful for gastritis. There's been some really phenomenal research recently on cacao. One of the breakthrough flavonoids that's really impacting intestinal inflammation, helping to get regenerate is the cacao flavonoid that's found in dark chocolate, especially very high content levels. You just want to be careful with the sugar. When you're looking at really rich, dark, high cacao content chocolate, that can be very beneficial for intestinal inflammation as well. With Hashimoto's you have to... so many things you have to avoid, so many things you're dealing with. But, dark chocolate is one of these things, especially really good quality, high cacao dark chocolate that can really impact gastrointestinal inflammation as well.

I think we're about three minutes over. I'm going to end this video here, and we will do these again in the future. Thank you all for joining in. I hope you were able to find some information you can use, and it was worth your time joining us, and I really appreciate all of you being part of our community. Thanks again for joining us, and we'll do it again shortly. Take care.