

Dr. Osborne: Hey, Dr. Osborne with Gluten Free Society, back for Module Nine of the Glutenology Health Matrix. Today we're going to be diving into troubleshooting what may be going on in your diet, and what may not be working for you, or why you might not be responding, or why you might've responded to some and then hit a plateau and you're continuing to struggle.

Now, many of you are struggling with autoimmune disease, and that's why you're here in this module today watching, because gluten is the number one scientifically agreed upon because or trigger for autoimmune disease. Again, that's why you're here, to learn about the gluten-free diet, but it's so much deeper than just gluten. I want to talk a little bit first about autoimmunity, and then I want to talk about some strategies that you might not be implementing within your process, within your diet change, et cetera, that might help you overcome or break through a plateau in your ability for your body to help it heal itself.

Let's first define what autoimmune disease is. I'm going to put a slide up. This is actually from the American Academy of Allergy, Asthma, and Immunology. An autoimmune disease is an illness that causes the immune system to produce antibodies that attack normal body tissues. Autoimmune is when your body attacks itself, it sees a part of your body or a process as a disease, and tries to combat it again. Again, this is the technical definition of what autoimmune disease is. Your immune system produces antibodies against you. That by-product of that is deterioration of that tissue. Autoimmune disease is an equal opportunity to destroy you, it can affect any tissue in the body. It can impact any organ in the body. There are more than a hundred forms of autoimmune disease.

This next slide I'm going to put up for you is from the American Autoimmune Related Disorders Association. These are just some statistics that I think are important for you to understand. An estimated 50 million Americans suffer with autoimmune disease, compared with 9 million with cancer and 22 million with heart disease. Again, almost 50 million people estimated to have an autoimmune condition. That's about one in seven people just in the United States alone. If you're in a room full of 10 people, at least one of you is going to be suffering with a form of autoimmunity.

Autoimmune disease is the number one cause of death in women under the age of 65. There are more than a hundred forms of autoimmune disease currently recognized by research. Symptoms cross many specialties. This is one of the reasons why people that have gluten related autoimmune get bounced from doctor to doctor, expert after expert, specialist to specialist, because the symptoms are not concisely located to one specific area of the body. Some people develop multiple autoimmune diseases. As a matter of fact, the average person with one autoimmune disease, if they don't figure out why they have it, will go on and develop up to six more, so seven in a lifetime. It's because it can morphine, it can change.

This is one of the major problems, is that medical specialties, medical education provides minimal learning about autoimmune disease, just like medical education provides minimal learning about diet, and about gluten. It provides minimal learning about the nature of autoimmunity, and the complexity of autoimmune disease. Specialists are generally unaware of interrelationships among the different

autoimmune diseases. This is something I have found infinitely frustrating in my career, is we'll have somebody who has seen me for some type of chronic arthritic condition, but they're also seeing an endocrinologist over here, and the endocrinologist doesn't understand that that low thyroid is actually linked to a gluten sensitivity, and they basically they play tug of war with that patient. They say, Oh no, you don't need to go on a gluten-free diet, that's dangerous for you. Here I am on this other side saying, well, you have autoimmune hypothyroidism, and you have autoimmune arthritis. We know that gluten can trigger both of those things. Again, the medical specialties don't recognize the nutrition, don't recognize the gluten undertone are in a relationship. Again, it can be frustrating. I know if it's frustrating for me, it's got to be frustrating for those of you who are watching that have experienced it.

Initial symptoms of autoimmune disease are often intermittent. They're unspecific until the disease becomes acutely flared. You can go on, and you might have generalized fatigue and brain fog. You might have dry skin, you might be losing some hair. Again, esoteric symptoms, nothing life-threatening, but when a flare hits, bam, that's when you get the diagnosis, and generally you get the diagnosis depending on which doctor that you go to.

Research too in the autoimmune realm is generally disease specific, not systemic specific. Researchers are looking for, instead of looking for what triggers the process of autoimmunity in the body, they're specifically looking at the processes defined as rheumatoid arthritis, where the process is defined as Hashimoto's. They're looking for drug interventions to inject in the biochemistry of humans as, again, as an intervention to help mediate symptoms. They're not looking at root cause, they're not looking at what triggers this cascade of events that sparks the pathway of autoimmune disease to begin. Because as I said, the average person that develops one autoimmune disease will go on and have seven in their lifetime, meaning that autoimmune disease, we really shouldn't consider the different autoimmune diseases as different entities. We should consider autoimmune disease as a distinct process that occurs within the body.

If we can figure out what's triggering it, that's where the magic happens. That's where the body has the capacity to heal itself. That's the walkway that I want you to understand this next slide. These are just some examples of autoimmune disease. You might see something that you've been diagnosed with on this. If you want more examples of autoimmune disease, you can visit the AARD. They list all of the different forms of scientifically validated and recognized autoimmune disease as well. Some of the examples here: Hashimoto's, rheumatoid arthritis, celiac disease, ulcerative colitis, type 1 diabetes, asthma, sjogren's, lupus, vitiligo, psoriasis, reactive arthritis, scleroderma, dermatomyositis, vasculitis, Raynaud's phenomenon, transverse myelitis, sarcoidosis, hepatitis, dysautonomia, reflex sympathetic dystrophy. Another word for that. Mild carditis, narcolepsy, multiple sclerosis, alopecia, Addison's disease, graves' disease, fibromyalgia, endometriosis, eosinophilic esophagitis, nephropathy, TPP, Guillain-Barre syndrome, restless leg syndrome, uveitis, and Crohn's disease.

Again, this is just a sample list. There are more diseases in the autoimmune realm than these. My advice to you would be if you have been diagnosed with a disease and you don't know whether or not it's autoimmune, you should ask that question. Is this an autoimmune process? Alzheimer's was recently identified as an autoimmune process. Osteoporosis was recognized to have an autoimmune component. Type 2 diabetes was recently recognized to have an autoimmune component. Most of these chronic inflammatory diseases that we recognize as common in our US population and global population of industrialized countries, actually do have some form of autoimmune component underlying their genesis. It's important for you to understand that.

What many of you may have been told, okay, is that the cause of autoimmune diseases are known, and there's nothing that you can do except take your medication. How can a doctor in one side of their mouth say, "We don't know what causes it," and out of the other side be so sure that the medication is the right thing for you to do. That was always something that puzzled me in my training.

You'll also probably have been told that food has nothing to do with autoimmunity, even though we know that food has everything to do with autoimmunity. You'll be told that there's no such thing as leaky gut. You've probably been told the chemicals and the pesticides used in food production are safe and perfectly fine to consume. Maybe you've been told that sunshine is dangerous, or that not getting vaccinated is dangerous and irresponsible. These are common things I hear from people all the time.

You have to understand that current system medically is diagnostic centric. What does that mean? That means they want to give what you have a name, and they want to match that name so that they can bill your insurance to give you a drug that's also paid for by your insurance. It's diagnostic centric. It's not designed to get you better. It's designed to victimize you. Remember, we talked about this. It's designed to create a name for your illness so that they can create a solution for the symptoms of your illness without creating an actual solution for your illness. It's why the medical model has largely failed. It's why the US ranks almost last in industrialized nations for degenerative diseases, for degenerative diseases like the autoimmune family of conditions.

Treatment of symptoms with chemicals, no thought goes into the patient empowerment with diet and lifestyle change. Lifelong disease management has to be implemented because there are no cures. This is what most people are told, and this is the way the current system works. This is why I ran away from that current system as fast as I could when I realized that.

Here's the other thing, the problem is getting worse, and I put a diagram on the screen for you. This is a diagram that just illustrates the exponential increase in what we're seeing in autoimmune conditions. Now, this particular diagram published in New England journal shows the increase in Crohn's and type 1 diabetes and Ms and asthma, but we see the same type of trending curve for pretty much most forms of autoimmune conditions. Now, there is a scientifically recognized central mechanism involved in autoimmune disease, and I want you to understand what that is. They're

actually several mechanisms that have overlap and interplay with each other. One of them is too much hygiene. We've talked about that, being too clean. Hyper hygiene is one of those mechanisms. Another mechanism is the process known as molecular mimicry, which is when toxins in your gut mimic your own tissue, generating a response from your immune system that over time turns into your immune system, attacking your own tissue. That's molecular mimicry.

Both of these tie into the process or the mechanism of leaky gut or intestinal hyperpermeability. We know leaky gut as a core contributing factor to the genesis to development of autoimmune conditions. It's very important to understand what causes that. We've talked a lot about how we know gluten causes leaky gut. You have to understand leaky gut is pre-autoimmunity. That's basically what leaky gut is.

If you think about leaky gut, it is like sometimes you go to the doctor and your blood sugar's a little high and they say, "Well, you're pre-diabetic." You're not diabetic, you're pre-diabetic. Well, leaky gut is pre-autoimmunity. Remember that this leaky gut, 70% to 80% of your immune system resides in your gut lining. There's a big set of tonsils that wraps around your gut lining called the gastro associated lymphoid tissue.

When your gut lining sprung leaks, and then the toxins from your poop, the toxins from the bacteria, and other things that you eat leak into your immune system, generating massive reactions and overreactions. Your immune system, it's not supposed to react to everything. Your gut is supposed to be quarantined. It's supposed to be this sealed zone where things are not allowed to leak in, but when they are, again, your immune system is overreacting because it is being bombarded. It's almost like a soldier.

The best analogy I can give you is a soldier who's at war. They're at war every day. They're being bombarded by waves of bullets, waves of enemies. There's never a break. There's never a reprieve. They can't get away. When you take that soldier that's been at war out of war, and you put that soldier in the general society, what's going to happen? Post-traumatic stress. If somebody taps that soldier on the shoulder, their first inclination might be to strike, might be to punch that person in the face because they're so amped up. This is what happens to the immune system over time with autoimmunity. It gets so amped up that it becomes over-reactive. That overreacted overburdened immune system is what contributes to the autoimmune process, which is what contributes to the hyper chronic inflammation, which is what contributes to the tissue damage, which is what contributes to the development of what doctors classify as diseases.

Again, if we can reverse engineer this whole process and move backwards, we can overcome the process of autoimmune disease. Understanding the causes of leaky gut becomes very, very important in this whole arena. This diagram I'm putting up, you've seen this before. I've shown it to you a number of times during this course. I want you to understand, I'm showing it to you repetitively on purpose, that there are different things that can contribute to leaky gut. Gluten is definitely one of those. Gluten and grains, GMO foods, plastics, pesticides, aggressive exercise. Those of you who are ultra marathoners, or those of you who are super aggressive in your

exercise, that can cause leaky gut. Medicines can cause leaky gut. Infections can cause it, food allergens can cause it. Again, those are our primary triggers for this process. Once you have leaky gut damaged, what happens next is it overstimulates the immune system, it allows toxins to have central access to your circulation. It causes you to become allergic to foods.

Basically those food proteins that are leaking across your gut, into your immune system, your immune system now starts identifying it as foreign. We acquire allergies. This is why so many of you, after you've gone gluten-free, you found you had to remove another food, and another food, and another food. It's because you've been acquiring or collecting allergies because your immune system's amped up. You have to figure out a way to change your diet and lifestyle to calm that immune system down.

It sets the stage for molecular mimicry, which is a process that we talked about a moment ago. It's linked to abnormal microbiome. We know that leaky gut disrupts the microbiome. We know leaky gut causes an inflammatory process in the GI tract that leads to malabsorption of vitamins and minerals and other nutrients. We also know that once leaky gut sets in, it also triggers what's known as leaky barrier syndrome. You've got a lot of different barriers throughout your body. You've got your blood-brain barrier. Your lung is a barrier, your lung epithelial lining, your kidney epithelial lining. That's a barrier too. These barriers begin to break down. This is when the disease becomes very, very systemic and very, very hard for doctors to treat symptomatically.

What causes autoimmune disease? I'm going to share a story with you. When I was training, and part of my graduate school training, I trained in the VA hospital in the rheumatology department. I spent several months there in my training understanding and trying to understand rheumatological autoimmune disease, things like rheumatoid arthritis and lupus and ankylosing spondylitis. Again, arthritides of an autoimmune nature. On my first day in this internship, my attending physician hands me a book called The primer on rheumatological disease. It's the master volume book of everything that you need to know about being in this hospital and understanding these autoimmune diseases in a professional way so that you can help these people.

I read the book from cover to cover, as I tend to do. I'm a learner. I wanted to learn because I wanted to be able to help people. When you're a young doctor, the thing you want to do the most is you, oftentimes as we're young, we have this naive viewpoint of the world, and we think we can save and change everything. I still believe that way. I'm still maybe naive in that, but I still believe that. I read that book from cover to cover.

As I read that book, what I found was, depending on the different type of rheumatological disease, there were known causes. The authors and the researchers that wrote this text would talk about all these different triggers for these different autoimmune diseases, and would talk about triggers being chemical triggers like pesticides, for example, or triggers being bacterial infections, or triggers being food-based triggers. I'm like, as I'm reading through this, I'm thinking, wow, this is

fantastic. This is a big part of my training already. I was already trained really well on nutrition. I understand food as a trigger. I understand food allergy really, really well. We're going to get along really well in this facility. I read the book. I don't think anybody really expected anyone to read that book, but I read it.

In my mind I had, okay, we have all these patients with all these diseases, very crippling diseases, let's start looking for their triggers. That was my mentality after reading the book. I wanted to say, okay, well, if these are the triggers for the disease, let's find out what the triggers for these unique people are because we know different triggers for different people. That's just the way disease works. I was somewhat ridiculed. I said, no, we're not going to look for triggers. We're going to treat the symptoms. We're going to give these people methotrexate. We're going to give them steroids. We're going to inject their joints with steroids. We're going to treat their symptoms, but we're not going to go on a hunt for their triggers. That wasn't what the doctors in the VA hospital were at all interested in doing.

For me, it was very frustrating because with an engineer mindset, you want to fix the problem at its core. You don't want to band-aid the symptom of the problem and ignore the glaring issue. The 10,000-pound elephant in the room should not be ignored. It should be addressed. In my endeavor, my point in sharing that story with you is, even the medical textbook that I was given, laid out triggers and causes for autoimmune disease. This is what has blown my mind for the past 20 years, is that when I talk to a lot of other docs, they say, we don't know what causes it. I pull out the book and I say, "Yes, we do." We may not know everything, but we have a place where we can start the investigation process. So many doctors, it's like they've given up before they've even begun. Again, this is not a damnation of the medical system more of doctors, in general, this is just my observation as I was going through school.

I want to share that with you, because I want you to understand if you've been told that there's not a cause or that we don't know the cause for your autoimmune disease, that's not entirely true. What I'm presenting to you today are some of those triggers and some of those causes, and some of the strategies that you can implement to help yourself identify what those things are.

We have one model of autoimmune disease, where there's an overwhelming scientific consensus on the cause. That model is celiac disease. We know with that model of celiac disease, that food is actually the trigger or the cause. This is another thing that has always blown my mind, is that if we know that celiac disease is caused by food, then it's not a leap to look at autoimmune diseases and think maybe they're caused by food too. It's just not a big leap of faith to be taking.

Most doctors won't take that leap. One of the reasons why I put together this course for you was to understand that gluten is one of the biggest known causes and agreed upon causes of autoimmune disease, period. That's number one, you've got to get your diet squared away with the gluten-free diet. With autoimmunity, there's no magic bullet. Some people go gluten-free, and it seems like a magic bullet. A lot of their symptoms improve or go away, and they feel fantastic, and some people don't. I want to talk about those of you who've gone maybe gluten-free and you feel better,

but you're still struggling in some way. I want to talk about why that might be. It's because autoimmune diseases are multi-factorial. I've put a slide up for you. You see here, one of the multi-factorial components of autoimmunity is food and nutrition. Part of that is the chemicals that are found in food today, the pesticides or herbicides, the dyes, the preservatives, the flavoring agents. We've talked about those things.

Another component of autoimmunity disease is your air quality. We know that smoking the chemicals and cigarette smoke, indoor air pollutants, outdoor air pollutants, electromagnetic pollutants from Internet connections, et cetera, air fresheners, those of you that use the plug-ins, these brands of plug-ins that emit these very foul chemicals that are toxic noxious to your brain. Then there's a water quality component. Water quality, fluoride, chlorine and chloramine, medications are found in drinking water. In my city of Houston, 42 prescription meds were found in a recent analysis. This is after the city got done filtering the water for us. 42 drugs in your water, that should be alarming. Water quality matters. Remember, your body is 66% water, and so the water's got to be clean.

Infections are a trigger. There's bacterial, fungal, mold, yeast, viral, parasitic infections, all different types of infections that can be triggers for an autoimmune process. We know that medical interventions can trigger autoimmunity, vaccines. There's a condition, my good colleague and friend, Yehuda Shoenfeld, wrote a book on the topic. He actually named it ASIA, A-S-I-A, Autoimmune Syndrome Induced by Adjuvants, and what they're referring to as an adjuvant is the adjuvants in vaccines. We know dental amalgams. My son's a dentist. In his training, they learned about amalgams, but in his training, one of the best schools in the world, they didn't really talk about toxicity of silver amalgams. We know the leeching of mercury from amalgams can be a trigger as I've shown you in many of the research studies. Medications can be a trigger for autoimmunity.

Surgical implants. There are number of surgical implants, breast implants, mesh implants for hernias. Some people are allergic to the different metals that are being put in their joints because doctors don't test to see whether the person is reactive to what they're about to do a replacement surgery with. That can sometimes be an issue for the genesis of an autoimmune problem.

We know the lack of sunshine can be a big part of the issue, vitamin D deficiency, melatonin deficiency. Very, very potent nutrients the body needs to sustain immune function. Lack of sleep, artificial light sources, caffeine overutilization, excessive stress, work-life balance, relationship balance. Whether or not you love what you do, life purpose, time management, these are all components of people's excessive stress. Then we have a lack of physical activity to boot. Not exercising, not getting adequate physical movement for your body to be able to function. Again, the sanitarianism of our time, of our culture, and then the convenience cost, the convenience factor. Everybody drives everywhere instead of walking or biking or using your own two feet. People are using mechanized vehicles to get everywhere, and it's really reduced our physical prowess.

We've talked about this, your phenotypic expression. Let me be clear. I'm going to put another diagram up on the boards called the triangle of health. I've shown this to you before, but in the core, again, is your genetic code. You can't change your genes, but on the outside of the triangle are your environmental, or would you say your environmental influencers. The things that you have choices, where you can make choices that will influence the behavior of your genes. You've got chemical choices, emotional-spiritual choices. You've got physical choices that you can make every day. The better the choices you make consistently over time, the better the input to your genetic code, the better your health outcome is going to be. This is actually referred to in science as phenotypic expression. Phenotypic expression equals your genes plus your environmental choices, and the outcome of the convening of those two things.

If you think about all the things I laid out for you, again, I'm going to put this diagram up for you on the board, all those things I just laid out to you, air quality, water quality, medical intervention, lack of sleep, sunshine, stress, physical activity, food and nutrition infections, all of those things are choices you get to make. That's the good news. That should give you the hope. Those are chemical choices, spiritual-emotional choices and physical choices that you get to make. You should maybe pause it right here and just pray to God that there is an answer where you are now empowered to be able to do some things about your condition as opposed to just living with the problem for the rest of your life and medicating the symptoms into submission. That should put hope in your heart.

Now, autoimmunity is the perfect storm. Another diagram for you. You can see the perfect storm of autoimmunity is an overlap between your immune system becoming dysfunctional, the genetics that you have. Again, we talked about gluten sensitivity genes, HLA-DQ genes, and then your environmental choices, whether you're eating gluten or being exposed to grains. Your nutritional status, whether you've got infections, et cetera. Those are all the environmental components. There's this perfect overlap between these three areas. In the center of that is the potential for autoimmunity, or the potential to overcome or to avoid autoimmunity.

Point is there's hope. Remember, that genes don't make you sick. Subjecting your genes to the wrong environment does. You have the capacity to educate yourself, to take action on what you learn, and by doing so, alter the outcome of your health. The ball's in your court. I'm giving you the tools to work with. After watching this, you're not going to have much of an excuse as far as action steps that you could begin to take. As I said earlier, there's no magic bullet. Autoimmunity disease is multi-factorial, and nutrition is a big, big part of that. It's a huge part of it. I mentioned this earlier, the biochemistry is nutrition.

In the medical textbook, it says this, each of our 100 trillion cells is a living structure that can survive indefinitely, and in most circumstances and instances, can even reproduce itself provided it has appropriate nutrients. What are nutrients? Nutrients are vitamins, minerals, carbs, fats, proteins, nucleic acids, amino acids. That's what nutrients are. There's about 40 different essential nutrients that the human body

needs to function and sustain that function. That's nutrition, that is biochemistry. Nutrition, what you eat matters in a very, very big way.

We've talked a lot about gluten, but part of what you should be worried about or what you should really be concerned about are the quantity of chemicals that are being added to the food in today's society. There's an order of magnitude of about 35,000 chemicals being used in the US alone as reported by the EPA, the Environmental Protection Agency. Many of these chemicals are reported to be potentially carcinogenic, meaning hazardous to human health. If it were just one or two or three, your body would probably be strong enough to overcome that bombardment, but when you're talking about being bombarded by the quantity and the, we'll just say not even just the quantity, but the quantity in terms of quantity of each particular chemical, but the overall quantity of the multitude of different chemicals that you're being exposed to.

There's a law in biology called law of synergy. It means that when you subject something to more than one chemical, then the outcomes are not predictable. Meaning those two chemicals can interact in a way that's not predictable, and the outcome can become exponentially synergistic over time. When you add one chemical to another, that's easier to predict, but when you add a third chemical, it's harder to predict. When you add a fourth, it's much harder to predict, and when you've got 35,000 of them, it becomes a nightmarish mess. It's almost impossible to predict.

You definitely want to be concerned about the chemical exposures that are coming through you in your food. This is why I've spent so much time educating you in the series on eating organic, eating non-GMO, and the importance of those things. These are the reasons why, because these are sometimes the hidden pitfalls that people don't realize. They say, "Oh, a little non-organic, not a big deal." When you say that enough, when you justify those choices enough and you're struggling to overcome an illness, it can sabotage your alchemy. It can sabotage your result.

Remember, aside from just reacting to food, because there's that food sensitivity food allergy issue that people can have, just reacting to the food alone, the FDA has also approved approximately 3,000 different food additives, preservatives, and coloring agents that are added to your food. 35,000 environmental chemicals, but 3,000 chemicals in the food that have been approved on what's known as the grass list that's generally recognized as safe food list in the US. The average person ingests 150 pounds of additives every year. If you eat the average standard diet, 150 pounds of food additives, the average male weighs 150 pounds or more. It's eating a human of chemicals when you think about it. Many commonly eaten foods are genetically modified, or contain genetically modified ingredients. I'm going to put a picture up of a cover of Newsweek. One of the problems, this is an older copy of Newsweek, by the way. This is 2007. You see kids and the growing food allergy threat. Why are we seeing more kids reacting to more and more things?

Part of the reason why is that what they're eating isn't actually food. They're being subjected to so many fake foods with so many different chemicals in them, so they're not really allergic to the food per se even, they're allergic to the chemicals, or they're

reacting to the chemicals in the food. Now, some of them are allergic to the food as well, but it's hard to differentiate. Again, part of the problem, is if we're trying to figure out whether or not we have a problem with almonds, it's hard to figure that out because maybe these almonds were soaked in a chemical or sprayed in a chemical, and maybe we're not reacting to the almonds per se but we're reacting to what the almonds were processed with.

Then now we can solve that problem. Well, how? We can eat organic almonds not exposed to chemicals, and that pretty much creates a solution in that scenario. Again, going back to what I've been harping on throughout all of these modules, is you've got to pick real food. You've got to disassociate yourself as much as possible from food additives, preservatives, dyes, and other agents that can be used.

You can see in this image that I've put up, this is pretty typical for many people. A lot of these processed foods. You can see all the different dyes and coloring agents and chemical preservatives, the sulfites, the metabisulfites, the CArTol derivative dyes that are added to many things. That's, again, pretty typical. We've also got the toxins in the food. The herbicides, the pesticides, the steroid hormones, the antibiotics, and excitotoxins.

If you're producing a pound of beef traditionally, when I say traditionally, I mean mass production meat farms. I'm not talking about grass-fed, grass-finished, healthy beef. I'm talking about these mass-production farms. The places like Wendy's and McDonald's and the different fast-food chains, is where they get their meat. It's where if you go buy regular meat in the grocery store, this is what you're buying. 5 to 8 pounds of chemically sprayed grain to produce 1 pound of beef. 5 pounds of chemicals for 1 pound of beef. Now, if you're eating grass-fed, organic, free-range, that doesn't apply.

There's a lot of vegetarians that are out there that promote the vegetarian diet saying that all meat is evil, and that's not true either. There are some people better suited for vegetarianism than for eating meat, but that is unique to the individual. We can't put a broad, sweeping, brushstroke and say that everybody should be on a plant-based diet, and no one should eat meat, because that would make a lot of people sick. Just like we can't say that everybody should all eat meat. That would also make a lot of people sick. Diets are different for different people.

My point in saying that is if you're not eating grass-fed, grass-finished beef, there's 5 to 8 pounds of chemicals that have been added to the earth to be able to produce that 1 pound of beef that you're going to consume. On average, one glass of inorganic store-bought milk contains the residue of about 100 different antibiotics. Once in your body, these antibiotics impact the microbiome, and subsequently can disrupt your immune system. Even though you may not be taking antibiotics, you might be indirectly exposing yourself to antibiotics due to the food choices you're making.

There's 3 million tons of pesticide used each year worldwide. More than 1,600 chemicals are used in the production of these pesticides. Most have not been tested for their toxic effects on humans, and the exposure of these pesticides in humans

has been linked to autoimmune disease. Among them, nervous system disorders, immune system suppression, childhood cancers, breast cancer, diabetes, reproductive damage, hormone problems, asthma, ADHD and autism, migraine headaches, and developmental delays in children.

That's kind of scary, especially when you look at the corollary graphs on the incidents of autistic and spectrum-related diseases to the introduction of pesticides in a big way in our food. There's a hand-in-hand correlation that goes with that. I know correlation is not causation, but correlation begins the scientific process of investigation, which is very, very important.

Now we're going to talk a little bit about air quality as one of those other triggers. I said this before, that outdoor air is less toxic than indoor air in most instances. Our indoor air can be 100 times more polluted, and this is based on a study that was done by the Environmental Protection Agency. If you're not filtering your air inside, you should be. There are a lot of different brands of filters. I can put some links under this video for you on some that we recommend that are affordable. They do a really good job.

Filtration of your indoor air, remember, new homes are built with tighter seals, tighter windows that the house doesn't breathe as well. When a house doesn't breathe as well, all the outgassing of your paints and chemicals and things of that nature stay in the home, so you just continue to breathe them in. Then, if you are one of those that use all these different chemical sprays with different smell agents or different aromatizing agents, those are highly, highly caustic chemicals that can trigger or contribute to the triggering of a lot of disease issues. These plug-in products, these air freshener products, those are bad ideas.

Obviously, if you're going to use something for the enhancement of the smell in your home, use a natural, organic essential oil and get you an essential oil diffuser and investigate that realm of improving the odor in your home if that's what you're about or trying to accomplish. We know that, again, the modern construction, we've got chemical VOCs that are being emitted, the volatile organic compounds. We've got the HVAC machines that just recirculate a lot of those VOCs.

We've also got an aging infrastructure. A lot of our schools and places where we work, we go to work in old buildings, the infrastructure is aging, and so a lot of water damage has occurred. Many of these places are mold-contaminated. Some mold can be present in the workplace, micro toxins can be circulating in the air. There are some places that are so old they still have asbestos or lead paint. These are also environmental exposures that can contribute to autoimmunity and major health issues. 24% of the US population that we know of is susceptible to mold issues. With this aging infrastructure, and I've seen a lot with teachers because our school buildings are aging, is mold toxicity issues develop. This is another one of those pearls for you today. If you're still struggling and you're doing everything so far right but you haven't investigated the potential for mold in your environment, that might be one of the missing elements that you want to have looked at.

We also know EMF emissions, especially with the onset of 5G as a new technology. These microwaves that are being emitted have the potential to disrupt cellular function. We know too a lot of the new 5G technology enhances the growth of mold. There are some studies that show that EMFs make it easier for mold to proliferate. If you're already at a workplace where there's mold proliferating and now they turn on the wireless 5G everywhere, is that mold going to proliferate even more aggressively? This is what researchers are looking at right now. Some things to be concerned about and to potentially investigate for you.

We know that the outdoor air quality, there's the ozone and there's automobile exhaust, and powerplant emissions, and gas vapors, and sulfur dioxide, and other outdoor allergens. There may just be some things in nature that you're already allergic to. We've got an increased population of growing asthma. A lot of this has to do with that air quality. Upper respiratory infections, lung cancer, heavy metal exposures from the petrol solvents that are being blasted into the air on a regular basis. These are all potential issues.

Here's the thing, you can't control the outdoor air. You can get outside, you can get away from cities on vacations, and you can get exposure to a lot of that fresh air, but you can control your indoor air. You can filter your indoor air, and that's where most people spend the vast majority of their time, is inside. Again, I would say control the points that you can control, and pray about the other things, and take intelligent actions in your life to escape some of those things where possible.

Moving on to water quality. This is another area of impact that a lot of people, again, they just completely ignore or dismiss. Your body is 66% to 70% water. If your water quality is poor, it's going to be really, really hard for you to make a recovery. Tap water, let's talk about that. Tap water contains unhealthy contaminants, including microorganisms, heavy metals, agricultural runoff, pharmaceuticals, household chemicals, lawn chemicals, gasoline, dry-cleaning solvents, drugs, chlorine fluoride, radioactive particles, lead, and other impurities. Many of these are known carcinogens. This is what the cities in most industrialized areas are calling high-quality water.

Now, I would agree that people are not getting parasitic infections or massive bacterial infections from the water supply anymore. It's because of all these chemicals that are being put in as sterilizing agents. However, you don't want those chemicals to be from your faucet to your lips. You want to be able to filter those things out. Water quality becomes a major issue, and if you're not filtering your water, you should be. Now, let's talk a little bit about chlorine. Chlorine was introduced to the public drinking water in 1908. This was done in Chicago, and it was used initially to eliminate water borne disease such as cholera and typhoid fever. The widespread use of chlorine in public water systems became available really around 1914. In the 1970s, from 1914, now fast track to the 1970s, it was discovered that chlorine, when added to the water, form something called a trihalomethane, which is a chlorine byproduct.

By combining this with certain naturally occurring organic matter such as vegetation and algae, what we have is now, again, a potential cancer risk. The National Cancer

Institute estimates that cancer risk for people who consume chlorinated water to be 93% higher than people who are not exposed to chlorinated water. Again, if you're drinking tap water with chlorine in it, this is a problem in terms of your cancer risk for sure. We know this to be the case.

We also know that most tap waters in most cities fluoridate their water, in America especially. Americans are consuming too much fluoride because it's in large quantities, it's in the municipal water. They're putting it in toothpaste and mouthwash. As a matter of fact, recently, the American Dental Association, for the first time ever, said, "Hey, we need to probably use less fluoride in things." That was a good move, a move in the right direction, but I don't think it was aggressive enough. The US Department of Health plans to lower fluoride in the drinking water for the first time in 50 years. That's good news as well. We know that studies show that fluoride is very damaging to the brain. That it can affect sections of the brain that regulate reactions to stressful circumstances. It makes us, well, let's just say easier to control. It makes us more prone to taking orders.

If those orders are coming from nefarious places, then that may not be a really great thing. The introduction of fluoride into the municipal water system was first used by Hitler. A lot of people don't realize that. He used it on concentration camp prisoners. Fluoride, not a good thing. Again, if you're not filtering the fluoride out of your water and you're getting exposure, this could be a problem.

I had someone come to me one time. Her and her husband were struggling with fertility issues, and they were looking at how they could implement nutrition to better overcome that. One of the things that we identified was fluoride toxicity. Fluoride toxicity was actually what was creating the infertility issue in this couple. Once we started filtering the water, they were able to conceive. Fluoride is a very, very big player in disruption of human physiology.

Next, I want to walk you through some more history because I think it's important for you to understand this. I'm going to set the stage for you to take better action in your life. Let's talk about the rate of infectious disease, or infection disease. There's a relationship between infectious disease and autoimmune disease, and that's what I want to show you. I'm going to put a diagram up on the screen for you.

What you're looking at here is the rate of infectious disease circle around 1,900 up to 2,000. What you can see here by these diagrams, you can see infectious disease rates were much higher. We've injected some time plots into this graph. The first one that you'll see is in 1914, the first continuous municipal use of chlorine in the water supply in the US was implemented. You see after that, infectious disease rates started to decline. Remember, cholera and typhoid fever were infectious diseases that killed a lot of people. Cleaning the water to an extent was a very good move. I don't want to demonize chlorine completely because it has been effective at reducing a lot of deaths.

You'll see there a spike right after that which is actually the influenza pandemic of 1918. You see after that pandemic occurred, we have a continuing reduction. If you look at that next time plot between 1920 and 1930, indoor plumbing became the

standard in many homes. It was indoor plumbing that allowed for basically the removal of toxic wastes bacteria and other contaminants in the water to be removed away from the home so that people weren't being exposed. You have to understand, before indoor plumbing, people used cisterns which were basically usually underground water storage tanks.

What would happen is that they would have a sewage like an outhouse, and that outhouse water would leak into cisterns and contaminate the drinking water supply, which is one of the reasons why infectious water was such a problem during the time. When indoor plumbing became available, the infectious microorganisms were taken completely away, and the groundwater leeching didn't occur. The water was pulled away from the home where it could be properly treated, again, with chlorine. It was these innovations and hygiene that made it possible for a lot of the reduction of infectious disease.

Again, looking at this timeline from 1900 to almost 1940, you had infectious disease rates dropping dramatically. You see in this graph dramatically, almost fourfold reduction just by the use of cleaning water and removing disease-infected water. Then you get to 1941, which is the year the first used of penicillin. Penicillin wasn't even used as an antibiotic. You can see the infectious disease rates were much lower by this time. Penicillin added a further impact. Certainly, it saved millions and millions of lives, especially on battlefields where soldiers had infections and would, otherwise, have died.

Even fast forwarding through this diagram, you'll see shortly after 1941, this is where you have the Salk vaccine introduced, and then later in the '60s, you have the passage of the Vaccine Assistance Act. We're going to talk more about that too. This is a very important piece of this autoimmune puzzle that you're going to want to understand.

Now, I'm going to switch diagrams here and I'm going to show you another diagram that I want you to look at. This is from the Journal of American Physicians and Surgeons. What we're looking at is just some examples of some of these infectious disease rates. This first diagram on the left is polio.

You can see the rates of polio were very high. Now, if we plot in again those same things that occurred in my last graph, which was water, sanitization and indoor plumbing, you can see that those two things led to the largest drop in polio rates before the vaccine was ever even invented or introduced. By the time we have the first polio vaccine, we have the disease rate dropping dramatically almost to the point where it's no longer a problem, and then the vaccine is introduced. Unfortunately, a lot of medical history textbooks give the vaccine the credit for the reduction of the disease, but many doctors don't believe that to be true at all. They believe that hygiene played a major role in the reduction of infectious disease.

You can see the same thing occurring in the middle graph on pertussis. You see the rates of pertussis were much higher when we introduced the Pure Food and Drug Act, and water sanitization and indoor plumbing, the rates dropped almost to negligible before the first vaccine was ever introduced. We see the same thing with

measles. Actually, even more so, you can see measles was very high. By the time we had plumbing and hygiene put in place, measles was so low as to not even really necessitate a vaccine. I know this is maybe the opposite of what you're seeing and hearing in a lot of news sources that are available today, but I'm what I'm doing is I'm showing you true historical charts. I'm not trying to create rhetoric for you to shout anti-vacs. I just want to educate you.

This next diagram that I'm going to pull up is, again, I said there's a difference or there's a correlation between infectious disease and autoimmune disease. Coming back to this, we had lots of infectious disease. We implemented hygiene, infectious disease rates dropped, as you can see in the diagram, but the more hygiene we introduced, you can see a corollary.

From 1950 on, we now see a climb in autoimmune disease. This goes back to the hygiene hypothesis. Are we too clean? Is this part of the autoimmune puzzle? Maybe it is. I think time is going to play out to show us that this is, in fact, one of the culprits of autoimmunity. Not the only certainly, but one of the culprits that you need to take into consideration.

If you also look at that same graph, I've put up some time plots again, you can see here I've injected a time plot where circa 1941 the wide use of antibiotics begins. Again, this is causation and correl-- this is not causation. This is correlation, but it's interesting. We have this increased hygiene, but we also have this injection of widespread use of antibiotics, which, in a sense, is hyper-hygiene. You're killing off microbes, which is what chlorine did, which is what plumbing did, is it reduced our exposure to microbes. Antibiotics destroys microbes.

The other thing that we see in this graph is that there was-- With a lot of this is, we see this vaccine liability law injected in around 1986. Maybe many of you don't know the history, but in 1986

the US government passed a new law that basically stated that vaccine manufacturers would no longer be liable for vaccine-induced damage. If somebody got a vaccine and it injured them, if it did permanent brain damage or neurological damage or cause an autoimmune disease, then that person had no legal recourse to sue the vaccine manufacturer.

The government passed this law and what the government was supposed to do as a bargaining point of passing this law as the government was supposed to create a governing body over the safety of vaccines and the monitoring of the safety of vaccines and the testing of the safety of vaccines. Here, in recent years, Senator Robert, RFK Jr., has sued the government for the documents so that they could illustrate to him whether or not they've actually done all the things they promised they were going to do since 1986.

If they took away the drug manufacturers' liability and they said instead of the drug manufacturers being liable, the taxpayer is going to be liable, but within the CDC, we're going to create a body of scientists whose job it is to regulate the safety and

the efficacy of vaccines. Well, he sued them to get the information for what they'd actually done and they couldn't really provide him with any safety data.

In essence, since 1986, the scientists haven't been studying vaccines' efficacy or safety. There's multiple decades now of vaccine use. Again, if this is another correlation with autoimmune diseases, the more vaccine use we see corollary, the more autoimmune disease risk we see developing. Again, going back to what I said earlier about Dr. Yehuda Shoenfeld, who coined the term ASIA, Autoimmune Syndrome Induced by Adjuvants. This has been very, very well-proven and I'm going to show you that proof here shortly.

Again, water quality going back to what we started on that segment was water quality being very, very important. Again, one of the things you can control is your water quality. You can filter your water. Filter the chlorine out, filter the fluoride and the other chemicals out. One of the best ways to do that if you live in a city is reverse osmosis. Again, I'll put some links to some resources for you on air and water filtration below this video. You can tap into those if you like.

Definitely, a must in this world if you're trying to conquer a chronic inflammatory process. The next one I want to dive into on this list of trouble points that you might be struggling with is infection. A number of different infectious microorganisms that are known triggers for autoimmune disease. I'm going to put up some examples on the screen for you here. What you're looking at here are infectious diseases and autoimmune disease links.

Again, just going down this list. Coxsackievirus is linked to myocarditis. Streptococcus is a bacteria that's linked to heart inflammation, autoimmune heart inflammation. Trypanosoma cruzi, which is a type of parasite, can cause cardiomyopathy. Borrelia, which is Lyme, can cause arthritis and inflammation of nerves or myelitis. We've got E. Coli that can cause uveitis inflammation. Campylobacter jejuni can cause GBS, Guillain-Barre syndrome. Chlamydia can cause multiple sclerosis. Clostridium difficile can cause all sorts of colitis.

We know, again, there's a lot of evidence that shows that different types of bacterial infections can actually cause or contribute to the formation of a number of different autoimmune diseases. Again, if you've gone gluten-free and you continue to struggle, this is that conversation you want to ask your doctor to help you work through the diagnosis of whether or not you have any of these infections microorganisms potentially contributing to your autoimmune disease. You see here a paper on the role of infections in autoimmunity disease.

Viruses, bacteria, and other infectious pathogens are thought to play a major role in the development of autoimmune disease. That's the bottom line. Here is another paper I'm putting up for you on examples of human autoimmune diseases and possible molecular mimicry mechanisms. Why do infections cause autoimmune disease? It boils down to something called Molecular mimicry, which is the concept of the genesis of autoimmune diseases that we've said earlier, when we talked about earlier.

We know that different types of bacteria can produce toxins, and many of these toxins can look like you. They can look like your eyeball. They can look like your thyroid gland. They can look like your liver or your skin or your muscle or your bone. When your immune system sees and views these infectious toxins as enemies and it starts to produce antibodies and other inflammatory chemicals against these toxins, it can then turn on your own tissue and start producing the same types of inflammatory components and antibodies against your tissue because it's confusing your tissue for those infectious toxic compounds.

This is a list of a major study that was done that shows all the corollaries between different bacteria and other infectious microorganisms and different forms of autoimmune disease. I'm not going to belabor you by reading this list to you, but we'll have it available in our resource section if you'd like to peruse it. We also know the mold. Mold is a type- and for many infections, we talked about candida as being a gluten mimicker because of the hyphal wall protein.

Aside from candida, we know that what mold produces, the mycotoxins, the toxins produced by mold are pro-inflammatory. You can see in this study here published in 2017, the pro-inflammatory effects of environmentally relevant doses of AFB1, that's aflatoxin B1, on the central nervous system-derived cells in vitro could potentially explain the immune dysregulation and neurodegenerative disease. What this is saying is that they think that the mycotoxin exposure from mold could actually lead to autoimmune diseases of your nervous system, neurodegenerative disease.

We also have another study here on aflatoxin being a fungal biometabolite. Usually, it's present in food but also can be environmentally present. You see here are novel findings open a new door to understanding the molecular mechanisms and functional consequences of this toxin inducing immuno dysregulation. Meaning a disruption of your immune system.

Immunotoxicity, meaning a toxic exposure to the immune system, and thus non-infectious disease in humans, meaning a micro toxin is not a living structure you could kill like a bacteria, you can take an antibiotic for, but a mycotoxin, you can't kill it. It's not alive. You have to remove them from the body. There are specialized ways that that can be done, but it shouldn't be done unless you're not being exposed to the mold anymore.

Remember, mold produces this non-living toxin. They can poison your immune system. Again, infectious microorganisms can be a major problem. Let's move on to the next thing that you might not have thought about if you put into your milieu of knowledge that might help you. I've said this and I've shown this slide to you a number of times that medications can kill.

They're actually the third-leading cause of death in the US. Here's a slide on prescription painkiller sales in death. You can see as the sales of prescription painkillers go up, so too do the deaths caused by these. I think it was Thomas Frieden, one of the past directors of the CDC, said, "We know of no other drug that is prescribed so frequently and kills so frequently as prescription opioids."

We know that drugs can cause dysfunction, and I've shared that with you a number of times. We know that many medications cause nutritional deficiency. For example, steroids deplete calcium and magnesium and vitamin D and vitamin C. These nutrients are very important to regulate your immune system, but also to allow your body to heal and repair itself.

Sometimes when people are trying to overcome autoimmunity diseases by going gluten-free, but they're also taking prescription drugs and they don't realize the prescription drug is creating a nutritional issue. What can end up happening is that nutritional issue can prevent them from fully making a recovery. We know that the end saves non-steroidal anti-inflammatories can deplete vitamin C and iron and folate. Again, these are just examples of an issue.

I'm going to show you another diagram. We'll put it up on the screen for you. Again, I don't want this to be construed as the most conference of breakdown of drug-induced nutritional deficiencies. I think really this needs to be a topic between your doc, but I want to show you some of the most common medication and some of the most common deficiencies caused as a result of the long-term use of those medications. You can see in this chart on the left, the name of the medication, or at least the type or class the medication is listed, and then some common examples are listed in the center.

Then the nutrients, the vitamins, the minerals, or the antioxidants of these nutrients deplete are also listed there. Again, this is just a resource for you. You can print out and potentially you could take it to your doc, again, and use it to engage in a conversation. We know that damage caused by drugs that treat autoimmune disease can also increase the risk for developing autoimmune disease. In this study, I'm going to put it on the screen for you here, too. You can see that in this case drug-induced liver injury has been observed in patients with multiple sclerosis.

Again, people with MS are being given a drug that can damage their liver. You can see here that drug-induced liver injury might be a common feature of MS drugs and call for more awareness by clinicians who should assess the possibility or the possible responsibility of MS drugs when they diagnose drug-induced liver injuries. Again, the drugs being used to treat autoimmune disease can create new drug-disease problems, even if it's not the same disease.

If your liver is being damaged by the drug that your doctors prescribing you to treat your disease, and now your livers overburdened, what is that going to do with your health in other ways? Remember, your liver is the major organ that helps your body to water solubilize toxins so that you can pee them out, and if that's not functioning, you're going to get in trouble.

The other thing the liver is, it's a storage facility for vitamins and minerals and nutrients. It's kind of rainy day storage if you're running low in a nutrient, your liver can push that nutrients into the bloodstream and ensure that your cells have enough of it to function. When you damage that liver, things can go downhill pretty quick. Again, this is just an example of a drug treating an autoimmune condition that creates a new condition that can exacerbate the existing problem.

Here's another study on TNF-alpha inhibitors. Now, TNF-alpha inhibitors, TNF stands for tumor necrosis factor. This is a type of drug that uses very commonly in autoimmune pain conditions. Rheumatoid arthritis is an example where we might see doctors using this type of drug to suppress the immune system to get relief of symptoms. You can see here that this type of medicine was associated with a 2-fold increase in the risk of cancer. That's NHL, non-Hodgkin's lymphoma.

These findings support the FDA black box warning. This type of drug or this class of drugs has the most aggressive warning you can put on a drug which is what's known as a black box warning because it increases the risk for the development of cancer. I just say this, look, you being treated for one disease and it increases the risk for the development of another disease. Is that a trade-off that you want? Again, this is where diet change can be a very, very powerful potentiator of helping you restore your health.

As we said earlier that gluten is the largest contributor to autoimmune disease that's ever been studied. We start with a gluten-free diet, but beyond that, when we get into the gluten-free diet, we now have to start looking at, "Are you on other medicines or are you on other things?" It could also be potentiating new problems in different ways and it's just time to open that conversation up with your prescribing doctor. Saw some medicines that can cause autoimmune disease in this case.

Again, I mentioned this earlier, but this is a cancer drug that's used after women develop breast cancer and is generally the recommendation is a five-year usage, but these are called aromatase inhibitors and they increase the risk for the development of autoimmune disease. Again, you're trading one for another, is that what you want to do? Now, here's another chart. I'm going to put this up on the screen for you, of drugs that are implicated in the development of drug-induced lupus. If you've never heard of lupus, lupus is a type of autoimmune disease.

There are a whole slurry of drugs that we know can actually cause lupus. I want to put this up as a resource for you because if you're on any of these medications and you're struggling with the symptoms of what may look like lupus, you want to know this. You want to be able to know this information. You can see this chart is broken down into definite causes, probable, possible, and recent case reports. What's the difference between definite? Definite means the research confirmation is great, it's definitely there. Probable means there's a high likelihood.

Possible means there's a likelihood, but we're not 100% sure. Case reports means this has happened, but we don't have enough case reports to say it happens for everyone. If you look at these different classes of medications, I'm not going to read them to you. There are a number of different medicines. Some of them you might recognize like statins. These are the drugs to lower cholesterol. One of the most commonly prescribed drugs in the world. Anticonvulsants and antibiotics are on this list, and steroids, nonsteroidal anti-inflammatories are on this list.

Again, if you're taking these, it's important you understand that many of these drugs can actually cause an autoimmune process to occur. In this study, published in the journal of lupus, drug-induced lupus including anti-tumor necrosis factor interferon-

induced. These again are drugs that are used to treat chronic autoimmune pain can actually induce lupus according to these researchers.

We got this other one. I've shown you this before when we were talking about pitfalls of the gluten-free diet. I mentioned that many of you might be taking a blood pressure medication and you're still struggling and you've gone gluten-free and you haven't experienced any benefit at all. This is one of those classes of medications that if you're taking you want to be aware of this. These are what are called the ARBs, the angiotensin receptor blocker drugs.

In this case, this drug called Olmesartan causing a sprue-like or villous atrophy on the small intestine that mimics celiac disease. Very, very important to understand that. As I mentioned, there over 100 papers now published on this connection. If you're on that kind of medication and struggling in your gluten-free diet to get better, have a conversation with your doctor.

Here's another study on Telmisartan. Again, another ARB with a different name. They can create problems. Here's information, the science on- I put this on the screen for you- on breast implants causing autoimmune rheumatic disease. You can see here that in this case, SPIs are associated in a proportion of patients with complaints such as fatigue, cognitive impairment, arthralgias, which means joint pain. Myalgias, which means muscle pain. Pyrexia, dry eyes, and dry mouth.

Silicones can migrate from the implant through the body and can induce chronic inflammatory process that looks like autoimmune disease as well. Again, this is one of those times where surgical implant might be a trigger and the medical intervention, you paid for the implant. Here's another study on undifferentiated connective tissue disease, meaning it's a type of autoimmune disease that affects the connective tissue.

You can see that in this case-controlled study on environmental exposure showed that patients with connective tissue disease were significantly more exposed to the adjuvants in vaccines, meaning the chemicals found in vaccines, the metal implants and surgical procedures, and the proximity to metal factories and foundries. Again, what's the combination here? What's the underpinning tone?

Vaccines contain toxic metals. Metal implants might have metals, and then if you live near a factory that has a metal foundry and that's being spit out into the air, those can all increase the risk for you to develop an autoimmune process. Again, if you're going gluten-free and you continue to struggle and you have implants or you had a surgery or you reacted very, very poorly to the last flu shot, or your last vaccine, these are things that you want to take into consideration.

Here's some more research on vaccines and autoimmune disease. You can see here, this is not a made-up association. It's very well documented and very well published. This was published in the journal discovery medicine. What you can see here is the association of vaccines with autoimmune disease and that list. On the left-hand side of the diagram, it says that the type of the vaccine, and then in the middle, it says the name of the autoimmune disease.

You can see influenza, that's the flu shot, can cost Guillain-Barré syndrome. The meningococcal vaccine can cause Guillain-Barré which is a very debilitating autoimmune disease and in some people, it can kill you. HBV, which is hepatitis B, can cause a mass and lupus and rheumatoid arthritis. The HPV, the human papillomavirus, also sometimes referred to as Gardasil has been shown to cause insulin-dependent diabetes, inflammatory bowel disease, vasculitis in lupus.

We know that MMR vaccines can cause thrombocyte disorders. Idiopathic thrombocytopenic purpura which is what that stands for, ITP. We know that hepatitis B vaccine, tetanus, hepatitis A can cause a condition known as macrophagic myofasciitis which is an autoimmune process in the muscle causing muscle inflammation. These are very serious conditions that we know can be induced by vaccines and adjuvants in vaccines.

If you look here, I've mentioned Dr. Yehuda Shoenfeld a number of times, but here's his quote. "Almost all types of vaccines have been reported to be associated with the onset of ASIA, that stands for Autoimmune Inflammatory Syndrome Induced by Adjuvants." Not my words, but his. He's one of the world's leading authorities on the topic of vaccine-induced autoimmunity.

Now, I'm going to show you next, we'll put up another diagram on the screen here of doses of vaccines for US children from birth to 18 years. I want you to see the history here. I talked about this earlier. In 1983, there were five doses that children would receive. Five vaccine doses children would receive by the age of 12 months, meaning your first year of birth, 5 doses of vaccines. When the government passed the vaccine exemption for liability law--

Now, today, in 2016, we have 24 doses by the age of 12 months. We went from 5 doses in the first year to 24 doses. A 5-fold increase in the quantity of chemicals that were injecting into our children. If we correlate that to the graph on the autism spectrum of diseases. We correlate that to the graph on the incidence of the increased rise in autoimmune disease, they match. Correlation doesn't mean causation, but it should open the door to more aggressive research. I want to make you aware of these correlations because if you're not aware, you could potentially be creating a problem for yourself.

One of my favorite stories in history is the story of Ignáz Semmelweis. He was a physician in the 1800s. Technically, he invented handwashing as we know it today. Before 1847, before this doctor made his observations, handwashing was actually somewhat frowned upon. Everything that we know and think of about handwashing today is because of this man. We'll put a slide up in his honor.

He's also known as the savior of mothers. Here's why. He reduced hospital mortality death rates in mothers from 10%. Meaning if you were a mom and you went in to give birth to your child to a hospital, there was a 10% chance that you would die. He reduced that death rate from 10% chance of death to 1%, which is why-- You can imagine the quantity of births that are delivered in hospitals today. It was his discovery that reduced the mortality of women everywhere. That's why he's called the savior of mothers.

There was a type of bacteria that doctors would carry on their hands. You have to understand at this time, it was not an uncommon practice for doctors to be dissecting cadavers. This was before formaldehyde and all the chemical preservatives. They didn't wear gloves, and so they would have their bare hands in dying, decaying dead bodies. I know it's morbid sounding, but this is the reality of history.

They would literally walk across the street to deliver a baby of a mom without washing their hands after digging around in a corpse. What would happen was this condition known as puerperal fever, which was an infectious bacteria that would kill both babies and mothers. This doctor made the observation that when handwashing was implemented, that death rates dramatically declined. Again, this is why I say he invented handwashing as we know it today from a medical perspective.

That's hygiene, so we go back to hygiene. I know a lot of the infectious diseases, we talk about vaccines being the savior of humankind from infectious disease. Hopefully, what I've done for you today is I've laid out some accurate historical information that helps you understand that vaccines didn't actually eradicate infectious disease. Hygiene did, handwashing, and clean air, and clean water, and centralized plumbing. These are all things that reduce the immune burden on people's lives so that they were less likely to die from infection.

I want to share with you another history of water management because I think it's important to make this point. Before 1820, water and wastewater were managed by privies, meaning, they're private privy or cesspools. These were underground holding tanks where all the poop and pee would go, and all the wastewater. These tanks, over time, they eroded, and they leached into the groundwater and got into rivers and got into public water circulation and made a lot of people sick.

Actually, it was this practice that led to a lot of the infectious disease. This wasn't as common, infectious disease was not as common in rural areas as it was in city areas where there were a lot of people, collectively speaking. We get these, again, these private cesspools or cisterns, if you will, that would leach the toxins into the groundwater.

You have to understand, in 1820, less than 5% of the population lived in urban areas. The cities with more than 8,000 people at the time were considered urban areas. Here's what happened. From 1820 to 1880, the population boom in the US, along with urban development led to infrastructure issues around hygiene, clean water, sewage and living in close quarters. You had this perfect storm of a growing population, people living on top of each other in close quarters, dirty water, and backup of sewage. This is actually the genesis of when we saw infectious disease at its height.

These are some of the reasons why. Go back further in time and infectious disease didn't plague men to the level that we saw in this timeframe. In 1854, there was a very smart epidemiologist physician by the name of John Snow. He discovered that water contamination lead to infectious disease transmission. In 1854, cities started to begin building water treatment facilities because, again, this guy discovered that water contamination was what was triggering the illness.

By 1885, Louis Pasteur-- You've probably all heard of pasteurization, named after Louis Pasteur, the French scientist who won a Nobel Prize for the germ theory of disease. This happened in 1885. Louis Pasteur proves the germ theory of disease. He really didn't prove the germ theory of disease, he proved that high levels of certain germs could spread disease. In 1914, the US Department of the Treasury enacted a set of standards effectively requiring drinking water disinfection, which led to dramatic increase in the use of drinking water chlorination by treatment plants.

Again, as I mentioned earlier, in the 1920s, new home construction began, and the US started to implement indoor standard plumbing with bathrooms. By 1943, we have the use of antibiotics. By 1948, we have what's called the Federal Water Pollution Control Act. By 1951, we have the US Public Health Service that adopts a fluoridation policy on public water. In 1970, the EPA was formed. Again, this history of hygiene and water management is relatively recent.

That all being said, going back to-- I'm going to pop this graph up on the screen one more time to show you the rate of infectious disease was much higher at the beginning of the 1900s, but it was chlorine in the water, it was indoor plumbing that led to the dramatic reduction of infectious disease. Those two things implemented probably have saved more lives in the history of medicine than any other two implementations.

This is a quote I'm going to read you from Dr. Michael Hambidge, Dr. Nancy Krebs. This is coming out of The Journal of Pediatrics. This was published in 1999, so this is not new. Here's their quote. "In conclusion, the largest historical decrease in morbidity and mortality caused by infectious disease was experienced not with the modern antibiotic era and the vaccine era, but after the introduction of clean water and effective sewer systems."

I want you to understand that because many of you are on the fence about whether or not you're going to get a vaccine. Again, if you're struggling with an autoimmune condition, you're going gluten-free and you're trying to overcome that, I want you to understand the connection between the risk of potentiating an autoimmune problem or exacerbating an autoimmune problem by taking that vaccine.

I want to give credit where credit is due, and that's hygiene. Hygiene has made probably the largest impact on the reduction of death and illness as it relates to infectious disease, more so than anything else. Again, I know I've talked about hyper-hygiene as well. I think there is a balance. I think we have cleanliness, we have water treatment, we have handwashing, and we have basic standard hygiene practices, but I think you can take it too far. That's what you have to be very, very cautious about.

Let's move on to the next topic, which is sunshine. One of the other elements that's missing from many people's behavioral pattern when they're going gluten-free, trying to overcome that illness, and they ignore this aspect. Sunshine. Here's what we know. Significantly low levels of vitamin D were documented in patients with autoimmune disease that were related to the presence of anti-thyroid antibodies and abnormal thyroid function tests.

This is an autoimmune thyroid disease specifically, suggesting the involvement of vitamin D in the pathogenesis of autoimmune thyroid disease and the advisability of supplementation. What does that basically mean? That means get your vitamin D. What's the best way to get your vitamin D? Sunshine. Go outside. What's another way to get vitamin D? Eat liver. Another way, eat mushrooms. Another way to get vitamin D is to supplement with vitamin D. A lot of people do supplement with vitamin D.

In my opinion, it's best to have your levels checked before you just start taking super mega high doses of vitamin D indefinitely. There's definitely a correlation between a deficiency of sunshine, again, producing that vitamin D and autoimmune thyroid disease. There's another research study published in the *Frontiers of Immunology* in 2015, evidence linking sunlight, vitamin D, and the risk of multiple sclerosis and type 1 diabetes.

Again, sunshine's important to reduce the risk of developing type 1 diabetes and MS, also autoimmune conditions. Here's the study on melatonin. Remember, the quality of sunshine that you get regulates your body's ability to make melatonin. Melatonin is a major hormone that acts as a very potent antioxidant. It also regulates your sleep and regulates the balance of your immune cells. There are certain types of immune cells that we have, and when there's an imbalance, it can trigger or contribute to the triggering of autoimmune disease. Sunshine is very important for your melatonin regulation.

Sunshine plays a major role through vitamin D and through melatonin, we know not getting adequate quantity. Again, if you're on the fence about sunshine, if you've been told to avoid the sun and you're struggling, you're gluten-free, you're still struggling, get out and get sunshine. Especially, if you live in northern climates where your exposure to sun is limited based on the time of the year, get it as much as you possibly can.

It's going to be very, very important to stock up. Sleep. Sleep loss and inflammation. I'm going to put a study up on the board because we've talked about sleep before, but I want to just hammer it home for you. What we get as subclinical shifts in Bazell inflammatory cytokines known to be associated with the future development of metabolic syndrome disease in healthy asymptomatic individuals.

Not sleeping creates subclinical changes in inflammation that can contribute to the development of metabolic syndrome, meaning cardiovascular inflammation and insulin resistance and weight gain, all those things that come along with it. Again, as I said earlier, autoimmune disease has been recognized as part of the process of the development of metabolic syndrome and diabetes. Sleep becomes very, very critical and very important. We also know that lack of sleep-- I'm putting another study up on the screen for you.

Lack of sleep creates blood brain barrier disruption. It affects the mechanism of how your body protects your brain from toxins. Again, you don't want lack of sleep because that low level of inflammation, that lack of sleep produces over time,

deteriorates your blood brain barrier. We'll also talk a little bit about physical activity. Exercise and activity are greatly diminished in our convenience based society.

I would argue in my experience over 20 years here is this. This is probably the number one thing that people fail to do in their planning and their health recovery. They go gluten-free and they do it properly. They try to make an effort to get some sunshine. They filter their air, they filter their water. They go to bed on time. This is the number one area where people say, "Ah, I just didn't have time for that today."

Then they neglect this part. You can't neglect this part. It's too critical. I emphasize that because if you're sitting down watching this video right now and you're talking to yourself inside your own brain and saying, "Yes, you're right, Dr. Osborne, this is the area I really have floundered on." I want you to understand that the more you build your lean body mass, the stronger and the more regulated your immune system will be.

Not the stronger as in the more auto immune response you're going to get, but the more capable your immune system is going to be at handling and normalizing the day-to-day work that goes on in your body to keep you healthy. Remember that, kids, you sit most of the day in school. Adults, you sit most of your day at work, manual labor jobs are outsourced by technology.

50% to 60% of Americans are overweight or obese. The aging population, generally speaking by most doctors, are instructed to take it easy. Well, here's a summary out of another study published in the journal autoimmune reviews in 2018. The incidents of rheumatoid arthritis, multiple sclerosis, inflammatory bowel disease, psoriasis has been found higher in patients less engaged in physical activity. Physically active are eight patients were found to have milder disease course, better cardiovascular disease profile, and improved joint mobility.

Physically active patients with type one diabetes have a decreased risk of autonomic neuropathy and cardiovascular disease. Both fibromyalgia and systemic sclerosis patients reported decreased disease severity, pain, as well as better quality of life with more physical activity. Now, I know what many of you are saying: "Dr. Osborne when I hurt, it's hard for me to exercise". Well, here's what I'm saying. You have to start where you're at.

Don't start CrossFitting today if you're in chronic pain, but you've got to start baby-stepping into the exercise because it's a catch-22. The less you exercise, the worse your outcomes. The more you implement exercise consistently, even though in the beginning it might hurt, even though in the beginning it might be tough and challenging, the better the prognosis of your disease outcome is going to become. That's important to understand because if you never get started in this one piece--

I have seen this one piece be the bane of a person's ability to ever recover. You want to understand that. This is, again, like I said, this is the largest part of the missing puzzle pieces that people don't implement to overcome years of gluten-induced damage and autoimmune problems. You've got to get your exercise piece dialed in. Now, here's another study published in 2014. It says obesity worsens the

course of rheumatoid arthritis, lupus, inflammatory bowel disease, psoriasis and psoriatic arthritis.

It also impairs the treatment response of rheumatoid arthritis, inflammatory bowel disease, psoriasis and psoriatic arthritis. Again, it worsens the course. The progression of the disease, but it also interferes when it impairs the treatments. The treatments are less effective. What does that mean? Does that mean that the treatments are less effective or that exercise is actually a better treatment? That's the way I look at that.

The research is not that that exercise impairs the treatment or lack of exercise impairs the treatment, it's that lack of exercise is a lack of treatment. Remember, exercise is the treatment or part of the treatment to overcome the illness. You have to understand that exercise, it's got to play one of the top roles in this process. Now, let's talk about another impact factor that could be getting in your way as well, and that is the stress piece.

Stress can be chemical, it can be physical, it can be emotional. All the things we've talked about in essence up to this point are forms of stress, whether it was air quality stress, water quality stress, sleep chronic, lack of sleep stress, et cetera. Again, those are all forms of stresses. Stress is just a biological process. Physical and psychological stress have been implicated in the development of autoimmune disease.

Up to 80% of patients reported uncommon emotional stress before the onset of their autoimmune disease. We know stress can be a major trigger. It can also be a major contributing factor to an ongoing autoimmune process. You've got to get your house of stress in order. Let's just summarize this whole module. Here's what we've got. We've got a population boom along with urban development which led to infrastructure issues around hygiene, clean water, sewage, and crowded living spaces.

This spawned an industrialized revolution that led to new thoughts and technologies in chemistry, new technologies and material science and ushering in a new age of convenience and mass consumption. During the same timeframe, a war against germs and acute infections raged on leading to germaphobia, overuse of chemical cleaning agents, coupled with an overuse of antibiotics, and our food supply, as well as through prescription medications.

Our immune systems are thoroughly confused because we eat food that is not food. We avoid sunshine. We dismiss sleep. We avoid intimacy for technology. We live sedentary lives in hyper hygienic environments that are bug-free, but chemically abundant, and use medicines to artificially manipulate how we feel because, frankly, the truth is too painful to accept. The thought of changing our behavior creates an illogical fear that subliminally gives us an excuse not to change. Is that where you're at?

Hopefully not. You wouldn't be here today probably if that's where you were. Here's your evolution in thought, and here's the takeaway. Sunshine is good. Not bad.

Hygiene is important, but too much can be a problem. Vaccines can cause harm, and you should get informed. Autoimmune disease has known mechanisms in causes as I've displayed and demonstrated for you today.

What are you going to do now? Remember that genes don't make you sick. You can no longer use that as an excuse. Subjecting your genes to the wrong environment makes you sick. Change your choices, change your life. You'll always have the capacity to educate yourself and take action on what you learn, and by doing so, alter the outcome of your health and your life. Now you just have to get to work. That's the hard part is putting down your reservations and rolling up your sleeves and going to work.

I wish you the best. I want you to get better. Please do me a favor. Leave your comments below this video. Let me know where you struggled, what aspects that you struggled with. Leave your comments and let me know how you overcame a problem, how you overcame your autoimmune disease. I want to hear from you.

As always, make sure you share this series with somebody that you love, somebody that you care about, somebody that you know could benefit from it. Our goal to save a hundred million lives. I can't do that without you. As I help you, I ask of your help in return. This is Dr. Osborne signing out for another module of the gluten allergy health matrix.

[01:30:28] [END OF AUDIO]