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**Speaker:** Hey, everybody, welcome back to The Glutenology Health Matrix. Today in Module Three, we're going to be covering a lot of really great information. We're going to be predominantly though talking about how to know whether or not you are gluten sensitive. If that's the posing question for you, if you need an answer on that, stay with us, we're going to be diving into the depths of the details about lab testing, what to ask your doctor for, the pitfalls of lab tests, we're going to talk about how to properly get that answer.

Then we're also going to talk about why gluten sensitivity is actually on the rise and dive into some of the history behind that. Stay with me, welcome back to the Glutenology Health Matrix. Now, I want to do a recap quickly of modules one and two. I think there are some important definitions that I just want to keep at the top of your mind. If you remember in Module One, we talked about some of these definitional differences. We talked about gluten allergy, and that that was an immune response. We talked about gluten intolerance, and we said that an intolerance is when you don't digest something very well.

We said that gluten sensitivity was a mixture of intolerance and allergy. We also defined what celiac disease was, the disease of the small intestines, the inflammatory disease of the small intestines caused by gluten. Then I introduced a new term to you last module called silent celiac disease and silent celiac disease is a term used and those who react to gluten, but they don't have positive testing for celiac disease directly, meaning their lab tests come back negative, but they still react to gluten.

We're going to dive into some of the reasons why. Again, the goal here is that if you're trying to figure out whether going gluten-free is the right move for you to make it, you can approach your doctor and have a very intelligent conversation about the ins and outs of this and help you guide yourself on this gluten-free journey. I'm going to put another diagram on the board. Again, fresh reminder, gluten sensitivity is not a disease, it is a state of genetics. However, if you ignore your genetics and you eat gluten anyway, it can trigger disease.

One of the diseases is celiac disease. It's the most well studied of all the gluten-related conditions. However, we spent all of the last module talking about 100 plus different medical conditions that we knew and know that gluten sensitivity can either cause or contribute to or exacerbate. Again, it's important that you separate the connection of celiac disease and gluten sensitivity. They don't mean the same thing. They're not the same thing. Everybody with celiac disease is gluten sensitive. Not everybody with gluten sensitivity will develop celiac disease, but they can develop other diseases that are just as dangerous, just as deadly, just as life-transforming in a negative way.

That's the take-home that you want to remember from lesson modules one and two. Again, gluten sensitivity is not a disease. It's a state of genetics. Now, what I'm showing you-- I'm going to put a diagram up on the board for you of the most recent scientific consensus. In essence, this was a gastroenterology meeting that happened, where all the doctors got together and tried to come up with a consensus

about what to do with this whole non-celiac gluten sensitivity conundrum because it very much is a medical conundrum.

A lot of doctors are hesitant to adopt any of this terminology because they really just don't understand it and they don't want to believe that gluten could contribute to so many different problems. As we mentioned in Module Two, gluten can mask its own toxicity and it's a hydro meaning it can create a lot of different types of problems. In this consensus, you can see this diagram, let's just blow that up on the screen for you. You've got that top box that reads gluten-related disorders, and then down below that pathogenesis meaning the genesis or the beginning of disease, and so you can see they break.

Again, this is this meeting's consensus. I don't agree with this consensus, and I'm going to show you why I don't agree, just like I don't agree with the common food labeling laws on gluten, as I showed you in modules one and two, I'm going to show you why I don't agree with this consensus and why it actually should be updated so stick with me.

You can see under pathogenesis autoimmune disease, and I've highlighted that one, and then they've only listed three different forms of autoimmune disease as a manifestation of gluten but we know that that's not true. We know there are more manifestations of gluten than just those three autoimmune conditions that are also autoimmune. That's one of the, what I would call errors in this document or in this scientific consensus.

The other is below celiac disease where you see the term silent celiac disease. Silent, what does that mean silent celiac disease? If they're negative on their tests, but they still have diseases that are being caused by gluten, that's not celiac disease. That really should be non-celiac gluten sensitivity. That brings us over to the right of this diagram where you see that I've highlighted gluten sensitivity. Silent celiac disease really should be rolled in under gluten sensitivity or aka non-celiac gluten sensitivity.

In essence, it's a terminology classification difference but I think it's an important distinction to avoid confusion because so many doctors are already confused on this issue. Remember, the average doctor graduating from medical school in the United States has less than seven hours of nutritional training. The seven hours that they do get is typically not pro nutritional training, it is anti-nutritional training, meaning they get taught that nutrition is not that important and that it isn't something that should be looked at.

I mean, obviously, nutrition is not that important if you're only going to devote seven or less hours to it in a four-year curriculum when nutrition is the fundamental of science and human health and wellness. Again, don't go to your doctor expecting them to have a vast knowledge of nutrition. Remember that gluten sensitivity is a nutritional issue. I said before, gluten sensitivity is not celiac disease, they are not the same thing, so we can't use the terms interchangeably. A lot of people try to do that, a lot of doctors try to do that. You can't. It's important to know that gluten

sensitivity causes celiac disease, but one can have gluten sensitivity, without developing celiac disease.

This is a study published in the American Journal of Gastroenterology a number of years ago, where science initially confirmed the presence of gluten sensitivity. This was actually a double-blind, randomized, placebo-controlled trial. If you know anything about science, you know that the gold standard in evidence is to perform a trial that is double-blind, randomized, placebo-controlled.

This study was done and it confirmed that non-celiac gluten sensitivity existed because before that study done in 2011, there was so much skepticism, and doctors were calling patients crazy and they were sending them to psychiatrists and saying they were perfectly healthy when in fact, they were being destroyed by gluten. I've showed you again, I showed you all the different ways gluten can damage the body in module two, you can go back and review that. People would go to their doctors with these conditions and be told that gluten had nothing to do with it. That actually even today still happens even though we've got this evidence and we note onto it gluten sensitivity exists.

Here's what gluten-induced damage actually looks like. This is an updated rendition on the diagram from the consensus study that I showed you a minute ago. Let's blow that up on the screen here. You can see there, gluten exposure can lead to two kinds of problems, primary problems meaning problems directly caused by gluten and then secondary problems, meaning problems that are secondary effects of gluten. Let's walk through those.

One of the primary problems associated with gluten exposure is what we call barrier permeability. Leaky gut is one of the hallmarks of the barrier permeability problem but gluten can cause blood-brain barrier permeability, it can cause lung permeability, it can cause kidney tubule permeability. There's a kidney condition called IGA nephropathy, which is linked to gluten. One of the reasons it happens is that your body starts producing antibodies against your own kidney. That breaks down that kidney barrier.

We know that barrier permeability issues that are directly caused by gluten, Dr. Paisano discovered that. Again, I did an interview with him shortly after he made that discovery a number of years ago, which you can go and watch on gluten-free society. He said, and I quote, "What happens in the gut doesn't stay in the gut," but he said it like this, "What happens in Vegas doesn't stay in Vegas." He said your gut's the same way. What happens in your gut doesn't stay in your gut because gluten opens the doors of your gut allowing everything into your bloodstream.

That barrier permeability issue is what contributes to-- you'll see the arrow to the right, to the autoimmune issues because once the gut's open, once the barrier's open now what is supposed to be quarantined in your gut and left in your gut to be protected by your immune system to protect you, the quarantined components of your gut, in essence, what's in your poop, right? That should come out in your poop it shouldn't leak into your bloodstream.



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We don't want that permeability and so all those toxins, bacterial toxins, fungal toxins, food toxins, preservative toxins, chemical environmental toxins are coming through now having the access to leak through your gut. Remember the largest part of your immune system, 70% called the Gastro Associated Lymphoid tissue or GALT, that is located directly behind the lining of your gut. When there's a leaky gut, all that stuff leaks right into your immune system over aggressively activating your immune system. This is why autoimmune disease develops as a primary effect of gluten exposure.

You can see examples of autoimmune disease. It's not just the ones listed in the diagram before but it's celiac disease, it's Hashimoto's, it's rheumatoid arthritis, it's psoriatic arthritis, it's ankylosing spondylitis. I've seen cases of polymyalgia go into remission on a gluten free diet alone. I've seen cases of people that have had scleroderma find remission on a gluten free diet. I've seen a number-- I've even seen very, very rare forms of autoimmune disease improve dramatically on gluten free diets, and that's because gluten plays a role in development of autoimmune disease.

Not just a handful but again, if you've got-- I've said this earlier, if you've got autoimmunity, and you haven't ruled out gluten sensitivity as a potential culprit or at least part of the problem, then you're behind the curve. You need to get this information to your doctor and you need to get the right testing done.

We also know other primary effects of gluten exposure are dysbiosis. It changes the flora in the gut. There's a number of studies that validate that. That gluten actually changes the microbiome, the basis of your microbiome and that can lead to a host of different types of problems. Predominantly vitamin deficiencies can occur as a result of diminished flora. That immune crosstalk happens. Remember your flora, one of its jobs is to talk to your immune system to prepare it, to help communicate to it about the potential for threats that are coming from your gut and possibly leaking in, and so your bacteria that live in your gut talk to your immune system.

When you change that flora, you potentially alter that immune crosstalk. In science it's called immune crosstalk. The communication between your gut bacteria and your immune system.

Then we have the acute IgE response. This is not necessarily a gluten sensitivity, but it's more of an acute reaction, the classic hives, the lips swell, the throat constricts, you can develop watery, teary, itchy coughing. Those are more of your acute types of symptoms. Those are your primary effects of gluten exposure. Then over on the on the right, we have secondary effects and the secondary effects largely have to do with the damage gluten creates.

One of the side effects vastly is nutritional deficit, is your GI tract is damaged by gluten, as your microbiome is damaged by gluten, you don't absorb and digest your food as well. You don't produce B vitamins in your GI Flora as well, so you can become more and more malnourished as a result. Again, that's a secondary effect because it happens after the fact. After the fact that the gluten did the damage to the GI tract or the microbiome.



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We also have systemic inflammation. Once that damage in the gut is done and all the barriers are blown open, now we have all these toxins that can leak and travel through your bloodstream to different organs and different tissues creating an inflammatory response, and that's all secondary damage. This is why so many doctors are very hesitant to look at this.

Remember, in primary medicine, doctors are predominantly taught, find symptom, diagnose symptom, treat symptom by suppressing symptom with medication. That's really the paradigm. Look, whether you agree with that paradigm or not, I'm not here to argue the merits of that paradigm. I'm here to argue the merits of truth with the importance of finding truth, which is, if you have a domino and that domino is lined up with other dominos, you knock it over, you have a domino effect, and this is what happens in the gut.

You have a domino effect when gluten blows a hole in your gut lining, it opens your gut lining up so that all those toxins from the food that you're eating, and the milled, and the contents of your GI tract now have access to every organ and every tissue in your body, which now means the domino effect travels anywhere it goes. Most people the way they react to gluten long term exposure is unique to their weak points.

Where are they weakest? Is their kidney the weakest area? Is their liver the weakest area? Are their joints the potential weakest area? Their weakest link is generally where gluten tends to go and affect them the most or the inflammation tends to go and affect them the most. Those are again, your secondary downstream effects, which is why sometimes when a person has developed inflammation in their joint as a result of gluten damaging their gut, they don't test positive per se for that gluten reaction, even though their joints are inflamed and swollen, and even though they respond by their joint pain and inflammation going away when they change their diet.

This is part of what we're going to dive into next, are these pitfalls in some of these lab tests, because the lab tests predominantly only check the primary without giving any kind of discernment into the secondary components or effects of the gluten exposure. Again, so one problem happens and it can create 10 more problems, and it's those 10 more problems that doctors get confused with.

Let's start with talking about blood tests. I want to be very clear. Most tests that are designed to check for gluten are really not gluten tests. They're celiac tests, and this is why I've spent so much time and effort educating you about the difference between celiac disease and gluten sensitivity. They're not the same thing. They can't be construed as the same thing, and that's why we can't use the same types of tests to determine them both.

Most of the testing, serology testing or serum blood tests, the doctors measure to try to isolate whether or not you reacted to gluten, are not actually measuring for a gluten reaction. We go through some of these tests. One of them is called an anti-tissue transglutaminase test. Another one's called an anti-endomysial antibody test. There's another one called anti-gliadin antibodies. Now anti-gliadin antibodies does test for gluten. However, remember we spent a lot of time and I told you this in

module one, I said it's going to be boring, and it's going to be sciency, but remember, we said that gluten is defined as a family of proteins in the seeds of grass, and that there is not one type of gluten.

We know there are hundreds and potentially more than a thousand forms of gluten to date. There's just in 2010 or 2012, researchers in Australia identified 400 new forms of gluten. So the science on this is not done is my point, and you have to understand that when you measure for an antibody against gliadin, gliadin is that one type of gluten found in wheat, barley and rye, but as I laid out in module one, there are lots of different forms of gluten, and they're not just wheat, barley and rye.

So if we only measure anti-gliadin antibodies, we're really not being comprehensive as to whether or not a person reacts to gluten. We're only measuring whether or not they react to gliadin. This is why it's important for you to understand this testing again, so you can go have a meaningful intelligent conversation with your doctor.

The other aspect of these antibody tests is they typically only measure IgA and IgG. Remember the diagram I showed you in module two of the IgG, IgA, IgM immune complex and T cell responses. There's all these different ways the immune system can react, but doctors are only measuring two of the six potential ways the immune system can react as it relates to only one type of gluten. I just said there are hundreds of different forms of gluten. So how can a test that measures one sub-fraction of gluten, when there are hundreds of different glutens, and it only measures two of the six ways your immune system could respond, how could we possibly assume that that test is going to be accurate?

Sometimes you might get lucky and catch a positive result, but for the vast majority of people that get the testing done, you get a false negative. You get the potential for false negative. False positives don't really happen when the tests are positive, but pretty much positive, but if you get a negative, it doesn't mean that you're not going to react to gluten. It means you're not reacting to gliadin, by an IgG or an IgA response.

Let's dive into a little bit more of this. Remember that when you have these tests done, again, anti-tissue transglutaminase, I'll put a slide up for you, anti-endomysial antibodies and anti-gliadin antibodies, you're typically measuring IgG and IgA antibodies, and if you have a positive result, what happens next in the chain or the sequence of events for most doctors, is that prompts them to send you out for a biopsy.

If your blood test is positive, then you go for a biopsy. We'll come back to that in just a minute. Let's talk more about some of the pitfalls of blood tests. Number one, anti-endomysial and tissue transglutaminase antibodies are specific for celiac disease. They're very, very specific, and the tests are very accurate if you do have active celiac disease.

Remember, why did we spend all that time defining the difference between gluten sensitivity and celiac? It's because if you have non-celiac gluten sensitivity and your doctor's running tests to measure you for celiac disease and it's negative, then he's

going to tell you that it's okay to eat gluten, and he's going to potentially be wrong. That's why you want to understand the difference.

Also, the anti-gliadin antibodies are only specific for gliadin, which is what I just talked about. There are hundreds of different forms of gluten not being tested, many with gluten issues are antibody deficient. That's another problem with serum testing. Remember I said one of the diseases in module two, I said that immunoglobulinopathies are a hallmark or can be a hallmark of gluten sensitivity problems.

Remember, if you're not producing adequate quantities of antibodies and your doctor is using an antibody based test to measure your reaction but your levels of antibodies overall are already too low, and he's relying on those antibodies to give him a determination as to whether or not you're reacting to something, you can get a false negative. Antibody levels could be low, and this is part of the conundrum is some doctors are running antibody tests for gliadin or for tissue transglutaminase, but they won't check your antibody levels and make sure your antibody levels are in the normal range.

The other thing is, many people react to other elements in grains that are not directly related to gluten, and so you might be grain sensitive in a sense, and we'll talk about more of this. We're going to get into the grains in module four. So stay with me. We're going to continue on this course of blood testing and talk about blood results.

This is coming from one of the world's leading researches on gluten sensitivity. This actually was published in the journal of neurology, neurosurgery and psychiatry in 2002. I'm going to read a couple, I'm going to put a slide up on the board for you, on the screen and I'm going to read a couple of highlights that I want you to understand.

This is a one is under the category of, but anti-gliadin antibodies lacks specificity. Here's what they're saying that IgG anti-gliadin antibodies have been the best diagnostic marker in the neurological population that we have studied.

This is this, again, this researcher's experiences that using IgG antibodies to gluten have been the best marker. Okay. IgG anti gliadin antibodies have a very high sensitivity for celiac disease, but there are said to lack specificity in the company context of a range of mucosal abnormalities, in the concept of potential celiac disease, they may be the only available immunological marker for the whole range of gluten sensitivity of which celiac disease is only a part.

He goes on to say that the finding of an additional HLA marker is-- remember I keep telling you we're coming back to genetics, the finding of an additional HLA DQ marker DQ1 seen in the remaining 20% of our patients may represent an important difference between the genetic susceptibility of patients with neurological presentations, to those with gastro intestinal presentation within the range of gluten sensitivity. What he's basically saying is that 20% of these patients that respond to gluten by having nerve damage, have genetic markers that are different than celiac genetic markers, meaning they have an HLA DQ pattern.

Remember I said earlier, HLA DQ are the genes that we measure to help to determine the susceptibility to gluten. The traditional patterns are what are called HLA DQ2 and HLA DQ8 patterns. Those are patterns associated with celiac disease. What this researcher is finding is that HLA DQ1 patterns are highly prevalent in people with neurological manifestations of gluten sensitivity. It goes on to say the introduction of more specific serological markers, such as anti endomysium and more recently transglutaminase antibodies may have helped in diagnosing celiac disease, but their sensitivity as markers of other manifestations of gluten sensitivity, where the bowel is not effected is low.

Meaning that these markers, the ones I mentioned again a couple of slides ago, anti tissue transglutaminase and anti endometrial, don't help to detect gluten and reactivity in people unless they have celiac disease. Again, these markers are just more specific if you have latent celiac disease or if you have the damage to the small intestine, then you find that these markers can be helpful. If you don't have that damage to the small intestine, that villous atrophy damage, then it's very, very common that you can get a false negative or miss a need for a person to go on a gluten-free diet. Again, pitfalls in blood tests.

Let's talk a little bit about biopsy testing as well. In medicine, the biopsy is the gold standard for the diagnosis of celiac disease, not for gluten sensitivity, for celiac disease. Here's what you need to understand about a biopsy. What happens is they run a camera down you generally in your small intestine and they'll take most-- depending on the doctor, depending on the Gastroenterologist, they'll take two samples. This was discussed actually, I think it was Dr. Peter Green of Columbia talked about how many doctors don't take adequate biopsy samples at his research facility.

That's what they find a lot of people when they have had prior biopsies, the doctors only took two samples. Now, why is it important? Because the gold standard for trying to find celiac disease on a biopsy is about six samples. Meaning you need to have more than just two pieces. Think of it in this term. Your GI tract is the size of a tennis court. Your actual small intestine has a surface area with all the folds and villae and everything there. The surface area, the size of a tennis court.

Now imagine you're standing on a tennis court and you walk over to a little section of the tennis court and you take a microscopic piece of that tennis court, and then you make the claim, this microscopic piece of this tennis court represents the entire tennis court. You could be very wrong because you could have taken a sample of that tennis court, but on the other side of the tennis court maybe the clay, depending on what it was made out of, the clay or the concrete or whatever it was made out of was busted up in the sample you took, you didn't see that it was busted up, you just saw that it was nice and clean and green, and it looked perfect.

This is what happens on biopsies is that a lot of times, again, the doctor doesn't take enough samples. He doesn't get a broad enough reflection of the entire small intestine. Oftentimes too, they don't take samples in accurate locations because there are certain locations that they look for that hallmark, villous, atrophy damage

on a biopsy, and sometimes doctors don't take it from those locations or don't take enough samples from those locations.

Again, the biopsy itself, if it's a positive result, it's definitely positive, but if it's negative, it's not definitely negative. I actually had a woman one time, she had 19 biopsies, the 20th was positive. The first 19 were all negative and it took her decades to get a diagnosis. She finally got the diagnosis of celiac disease, but again, it took decades to get to that point. If somebody would have intervened earlier by looking at other markers and looking at genetics, they may have been able to save her 20 years of grief.

This is why the biopsy, although it's considered the gold standard in medicine as a diagnostic tool again, for the diagnosis of celiac disease, in my opinion it's not a great gold standard. If you're relying solely on that, you could get a misdiagnosis.

Beyond that, you have to understand that gluten is not the only thing that can cause villous atrophy. That's what they're looking for on a biopsy. They're looking for flattening of the little folds of your small intestine. There are other things, for example, parasites can cause villous atrophy. We know that genetically modified soy oil, corn can cause villous atrophy. Again, there are certain drugs that we know can cause villous atrophy. Having a positive biopsy still doesn't necessarily mean you have celiac disease, unless you've ruled out all those other potential reasons as to why villous atrophy can occur as well. Again, the biopsy can be helpful, but it can also be misleading and it can also give you a false negative.

Let's look at this research study. This was a person who had a negative biopsy, but they have positive blood work. Again, the antibody serology or the blood work of the antibodies is an important tool in the investigation of celiac disease, but it does not always correlate with the appearance of the small intestine. Patients with celiac disease serology or with positive celiac blood work but negative biopsy are at increased risk of future celiac disease. Here's what that basically means. Unless you've had positive blood work and a positive biopsy, doctors generally tell you, you don't need to go gluten-free.

That's the standard of care. You could be reacting to gluten and it shows in your blood, but you could have a negative biopsy and they will tell you, don't worry about going gluten free. That's like saying, Hey, your tires on your car, they're definitely balding, but don't worry about changing them. When they completely blow out and your car spins off the road and you get in a crash, that's when we'll call it celiac disease. You don't want to wait to the point where the disease becomes so manifest that it's destroyed your health, that you actually now you have the justification for changing your diet.

Again, early detection is best and that's one of the reasons why biopsy is such a poor tool, because it's very rare that a biopsy actually will pick up on early damage biopsy. I'll show you an image here in just a minute. It'll tie all this in together. Individuals with positive blood work for celiac disease, but normal mucosa often have celiac symptoms and a family history of celiac disease. In essence, they're being effected by the gluten. They're just not being told to go gluten-free.

There's another case published in the Journal of Pediatrics where they found that celiac disease without villous atrophy in children. Again, this is positive blood work with negative biopsy. Another study displaying what I just finished talking about. I'm not going to belabor that.

Why we can't rely on celiac testing only. Remember gluten sensitivity-- this is coming from the Lancet, gluten sensitivity is characterized by abnormal immunological responsiveness to ingest at gluten and again in genetically susceptible individuals. Celiac disease or gluten sensitive enteropathy is only one aspect of a range of possible manifestations of gluten sensitivity.

Gluten sensitivity was shown to manifest solely with neurological dysfunction. Again, we're hearing a lot of the same thing from a lot of different studies and even from some of the same studies, but we're hearing the same things about gluten can cause other things beyond celiac disease and that blood tests for measuring gluten can be inaccurate. That biopsy for measuring villous atrophy can be misleading. The biggest reason why is because both of these testing methodologies depend on the presence of late stage celiac disease to be real super accurate.

Again, the analogy is by the time your tires were so bald that they blew out and you crashed from the side of the road and your car blew up, and now you need reconstructive surgery, that's S41 celiac disease, whereas we could identify gluten sensitivity when the tires are bald and change the tires and you could keep going on your merry way and your health would reflect the same-- Your health would be analogous to your tires. That's what we would rather prefer having.

I'm going to put a slide up on the screen for you because I told you earlier I would show you a slide that would make this all make better sense. What we're looking at here is a slide. You can see on the left, it says latent celiac disease existing but not manifest, meaning that the symptoms are there but the villus architecture or the villi are normal. They look normal. They don't they don't look bad. The other symptoms are there.

You see above that you're going to see cardiomyopathy, permanent tooth enamel defects, liver damage, arthritis, autoimmune disease, all those are potential manifestations of celiac disease, before any kind-- Or of gluten sensitivity rather, before celiac disease begins to manifest in the gut. Meaning all those can happen before villous atrophy occurs and those things can happen even in the absence of villous atrophy.

Again, this is why I don't like the term, silent celiac, because it's not really celiac disease. It's gluten sensitivity. Again, think of gluten sensitivity as the umbrella and everything below gluten sensitivity as manifestations or different ways that people might react to gluten. Many people are so hyper-fixated on, do I have celiac disease? They don't see the forest through the trees. It's gluten first, you're gluten-sensitive, and you consume gluten and the potential for the inflammation and the tissue damage in the autoimmunity is there, and how your body is going to manifest that damage is unique to you. It's going to be how your story plays out.



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What this research study is showing is that it takes years and years and years, you see the injury and the continuum and then overt celiac disease, meaning that now we can actually see it on a biopsy that going from the left to the right of that diagram can take decades for that damage to show up. That's my point. If you wait decades to change your diet, then you could be living decades of your life with poor quality of life and poor health, struggling with disease, being medicated for diseases that may be diet could change or could help you fix. Don't get stuck in that trap.

Here's just another published study on the liver involvement in celiac disease. I thought I would make a special mention of the liver and one of the reasons why so many people are-- It's so popular nowadays to do detoxes. Everybody wants to do a liver detox. Why? Because we're surrounded and swimming in toxin. Let's just say that, that's the mainstream thought on this. If the liver is being damaged, then it can't detoxify very well. Doing a detox doesn't really help that much. The best detox for your liver is to find out what is actually creating the toxic burden on your liver. Gluten is one of those.

One of the sole manifestations of gluten sensitivity is non-alcoholic fatty liver disease. What this study is showing is that liver involvement, you can see here, a wide spectrum of liver injuries in children and adults may be related to celiac disease and in particular, and in particular, a mild parenchymal damage characterized by absence of any clinical signs or symptoms suggesting a chronic liver disease and by nonspecific histological changes reversible on a gluten-free diet. Makes sense of that. Basically mild damage to the liver that's identified on biopsy, that can change when the diet changes. Meaning that the damage is completely reversible if somebody goes on a gluten-free diet.

One of the other ways that it can manifest is a severe liver failure, potentially treatable by a gluten-free diet. Such different types of liver injuries may represent a spectrum of a same disorder where individual factors such as genetic predisposition - I'm going to keep hammering you guys with this genetic predisposition because it's genetic, not that the genes caused the disease, but if you've got gluten sensitive genes and you exposed them to gluten, they're going to react to that gluten exposure. That reaction could be that your liver becomes damaged or your muscles become damaged, et cetera.

Anyway, such as genetic predisposition, precocity, and duration of exposure to gluten may influence the reversibility of liver damage. If you've been diagnosed with hepatitis and you don't drink, you're not an alcoholic and you're not really even an alcohol consumer think gluten first. Think gluten first because there's known data out there and I've seen this actually happen-- I actually had a woman one time she was accused of being an alcoholic, and she was anything but and we took her gluten-free and within six months her liver function completely normalized and her liver damage was no longer identifiable.

Again, diet change could save your life, literally save your life. Your liver is your primary detoxification organ. If it's being damaged as a result of what you're eating, and you're being told eat your whole grain, eat your whole grain and here you are,



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you think you're eating healthy, and you're destroying your liver and every year trying to do a liver detox because you think that's the answer, investigate gluten sensitivity.

Anyway, the bottom line on testing, serum and biopsy tests are geared toward trying to diagnose celiac disease and they're not designed to diagnose gluten sensitivity. They're not accurate for non-celiac gluten sensitivity, or what some people want to call silent celiac disease. You have to remember that physician training on nutrition is limited and nutritional issues, when you have limited training, it's very hard to make the best recommendations when it comes to a nutritional-related illness.

If the disease is caused by food or the food spectrum, but you haven't gotten any training in that region, then in my opinion, that doesn't make that doctor the best qualified to help you navigate your diet, potentially help you navigate whether or not going gluten-free is the right move, not when they're trying to look for celiac disease, because they don't understand the difference, the fundamental difference between celiac and gluten sensitivity. Again, not the same thing. This is why so many people never get introduced to a gluten-free diet as an option for improving their health because their doctors don't understand the topic.

Now that you do, you can have a different conversation with your doctor and hopefully move the needle forward. I want to bring in a few quotes here from some of the world's leading researchers on the topic. Again, although I have a lot of expertise in this arena, and arguably, I am one of the leading experts in the world on this topic, I want you to hear from people who I would consider to be even bigger experts than myself. This is a communication from Dr. Alessio Fasano. Again, he's the chief of pediatric gastroenterology and nutrition at Mass General and he's also a professor of pediatrics at Harvard School of Medicine.

Here's his quote, 60% to 70% of those who think they have celiac disease and they seek help from his research center are actually gluten-sensitive, they do not have celiac disease. That's a big statement because here's a guy who has a research facility where people travel from all over the world to see him to try to figure out what's going on with them, whether it's gluten or celiac related and he's saying that more than two-thirds of the people that come to see him have gluten sensitivity, but don't have celiac disease.

Yet, every doctor in the country, I don't want to say every because I don't want to generalize, most doctors in the country, again, the lab testing they use focuses on the identification of celiac disease, but for Dr. Fasano world-leading researcher says that up to 70% of the people that come to him don't have celiac disease, they have gluten sensitivity and again, they are not the same thing.

Then we have Dr. Peter Green again, I mentioned him a few times earlier. He's the director of the Celiac Research Facility at Columbia University in New York. This is his quote, "Recent studies are showing the gluten sensitivity may be much more common than previously thought. It may in fact be a separate disease entity that involves different organs and different mechanisms in celiac disease. While there is no doubt that the condition exists, the lack of definite criteria for a diagnosis has resulted in a skeptical attitude on the part of many doctors."

He goes on to say, "The acceptance of gluten sensitivity as a valid condition has evolved." Again, I want to be very, very clear, this isn't just me and my small corner of the world talking without scientific foundation, this is what most leading researchers are saying. The problem is that most of your practicing doctors aren't implementing what current research and what new and updated research is saying on this topic. They're using antiquated information to look for celiac disease without the understanding that gluten sensitivity is a separate entity, a separate thing altogether, and that they're not synonymous.

Again, gluten sensitivity is not celiac disease. Testing for celiac disease without looking for gluten sensitivity can lead to years of gluten exposure that causes inflammation, damaging chronic disease. I mentioned this study earlier, we'll put those back on the screen for you but science finally confirms gluten sensitivity. That study was done. It was a double-blind randomized placebo-controlled trial in 2011. There was another study done in 2015 and it was another double-blind randomized placebo-controlled trial that reconfirmed the existence if you will, of non-celiac gluten sensitivity

has its own entity. Again, I want to be very, very clear if your doctor is saying something different, it's probably because he hasn't read these studies, it's probably because he's not versed in this. Okay, let's move into why genetic testing is ideal. I'm going to give you more information about testing because what I've just spent the last mini minutes doing is telling you that if you have your doctor test for celiac markers, celiac bloodwork, biopsies, you might get misled. Okay, well, if that's the case, then what the heck do we do? What are we supposed to do? This is why I really prefer genetic testing and I think genetic testing is more ideal.

Now I'm going to put up a screen on the screen, a slide for you, and you're going to see this is actually coming from a journal called *Autoimmune Diseases*, volume 2014. What you're seeing in this image is the interplay between genetics, diet, toxic chemical exposure, infectious microorganisms, and autoimmune disease, right? What happens to people that get chronic exposure to gluten? For the most part, they develop a plethora or array of different autoimmune diseases, we spent all of module two discussing all the different conditions linked to this.

If we know that gluten can contribute to that autoimmune spectrum, and we know that we can identify the genetics of gluten sensitivity, to me, that's where we get early detection. Early detection is best before the damage occurs. In other words, don't wait for your body to develop an autoimmune disease, because those can take three to four decades to develop. If we can detect gluten-sensitive gene patterns early and change the diet early, then we can have an immeasurable impact on health outcomes. Remember, genetics can be measured to identify predisposition to reaction to gluten.

Then diet can be changed based on genetic predisposition, diet's super easy, that's as simple as a diet change. Now, it may seem overwhelming at first, we're going to talk about how to make it not overwhelming in upcoming modules, but diet is the simplest way. Living a life full of chronic autoimmune pain, to me, is the hardest thing

in the world to have to do, especially harder than diet change. Diet change, to me, is a relatively easy thing to do in that regard.

Then toxic chemical exposures, those can be traced, tracked, and controlled. Infections can be addressed, if you have a bacterial infection, you can see your doctor and get an antibiotic or address it in whatever manner you see fit, but my point is, genetics are the one non-controllable variant here. You can't change what you're born with but you can analyze what you're born with, and you can modify your behavior so that what you're born with works with you instead of working against you.

Let's talk about genetic testing and a little bit more in-depth. Now, I've been talking about genetic testing for gluten sensitivity for a very long time. As a matter of fact, we've been talking about this since 2009. It's interesting that not very long after my foundation and our expertise in all of our published articles about this topic started to come out, Mayo Clinic actually adopted a model of using genetic testing in people, specifically in people with irritable bowel syndrome. You can see that, I'm going to put this slide up for you. You can see patients with IBS-like symptoms that didn't have positive bloodwork, meaning they got the celiac bloodwork and their antibodies were negative.

Their next step in their standard of care in their process is to do genetic typing, HLA-DQ gene testing. If the results come back positive, they're actually putting their patients on a gluten-free diet trial. In my opinion, that's a step in the right direction. I don't 100% agree with a three to six-month trial, generally, what I see, because I've been doing this 20 years. When I see somebody with gluten-sensitive gene markers, we don't do a trial of diet, we get the diet cleaned up of gluten. The trial comes in when people cheat, and in my experience has always been when people go gluten-free for six months and then they start eating again, they get sick again.

The trial by fire is really what leads them back to the gluten-free diet. It's the trial by fire because when they have the genetic markers and they deviate from the diet and then they start eating gluten again, they really start to manifest their symptoms and their problems again. Basically, they're diet-compliant as a result of wanting to be healthy instead of being sick.

All patients with autoimmunity should be screened genetically for gluten-sensitive gene patterns. This diagram on a pop-up on the screen for you comes out of the journal Nature. You see it's similar to the other diagram I showed you where there's this intersection between your genes and your immune system regulation and your environment all converging together. They all interplay with each other and if you have the right milieu or mix of genes and environmental triggers and immune regulation dysfunction, then autoimmune disease sets in.

What I'm showing you in this diagram are some-- This is a modified diagram where you can see some of the things that cause immune regulation issues. Vitamin D deficiency, leaky gut, but what causes vitamin D deficiency, lack of sunshine, we know that gluten has been linked to vitamin D deficiency. We know that gluten can cause leaky gut. Again, leaky gut causes immune dysregulation. Gluten plays a role



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in the genetic component, gluten plays a role in the immune regulation component and of course, gluten plays a role in the environmental component, because gluten, you don't have gluten in you naturally, you consume gluten from the environment.

It's the foods that you eat, the grains that you're consuming, and your environmental components. We know if we can isolate those genes and we can impact your immune regulation while impacting a change on your environment through a diet change, then we can have better outcomes in terms of autoimmune progression.

What are the gluten-sensitive genes? I'm not going to belabor these because I'm not going to teach a class on genetics today. I think it would be probably very confusing to most of you, but these are the basic gene patterns for gluten sensitivity and for celiac disease. You'll see the ones that have stars by them are actually celiac gene patterns, where the ones that do not have stars by them are what we call non-celiac gluten sensitivity gene patterns. These are the things that should be looked at by your doctor and these are the things that lab tests like 23andMe, and again, some of these other genetic labs, they're not running this, they're not looking at this, they're looking at other components.

Here's what we know, HLA-DQ2 and HLA-DQ8 genes are linked to celiac disease. We know they're also linked to non-celiac gluten sensitivity, as well as other autoimmune conditions and there are some references here. If you really want to go read more on this topic, you can, I've put the references up for you. We also know that HLA-DQ1 genetics and HLA-DQ3 genetics are associated with non-celiac gluten sensitivity, but not celiac disease. Again, twos and eights are celiac disease and non-celiac gluten sensitivity, whereas ones and threes are non-celiac gluten sensitivity alone.

These gene alleles have also been associated with an increased risk for several autoimmune conditions, including autoimmune neurological damage, which I've showed you a number of studies tonight showing that one of the sole manifestations of gluten exposure can be nerve damage, which is why it's so important to detect genetics early because nerve damage takes a very long time to heal and if you let a neuropathy progress and transgress into massive nerve damage, remember, nerves are one of the slowest healing tissues in your body. I've seen cases where a person had a 20 or 30-year neuropathy, and it took years for them to recover.

I've had cases for four or five years. There's improvement with the gluten-free diet, there's improvement, but it's super slow, super tedious. A lot of times, you've got to support them with nutrients like vitamin B12, because they're low in those things because gluten can also cause nutritional deficiencies, and it just takes a really, really long time to heal and for some people, it's really, really painful.

There's this balance between medication and the pain and keeping their diet clean and keeping on track. You don't want to let, again, decades of damage occur where your nerves are so damaged that it takes vast quantities of time for them to heal. Detect it early, potentially even prevent the problem from happening, but detect it as early as possible, so that you have the optimal capacity for your body to be able to recover.

This is a breakdown. I'm going to put another diagram on the screen. This is just an oversimplified diagram of HLA-DQ genetics and gluten sensitivity. What you're looking at here, this diagram is a diagram of a white blood cell, and you see the big blue circle here and then in the core, you can see the genetics, those are chromosome six. There are genes called HLA-DQ genes. There's two major genes that we're looking at with HLA-DQ, there's what's called the alpha 1 and the beta 1 gene, HLA-DQA1 and HLA-DQ beta 1.

Above the change, you'll see an arrow that points to a shape that looks like a Pac-Man that's facing the sky, and there's a little alpha symbol on the left and a beta symbol on the right. This is, again, a rudimentary drawing of what an HLA-DQ receptor looks like on the surface of your immune cells. Remember, this is a white blood cell. This antenna, what an HLA-DQ gene does is it codes. It produces the code that your body uses to produce an antenna that sits on the surface of your white blood cells.

The job of this antenna is to help your body detect friendly from foreign, which is why this is such an important gene to measure as it relates to gluten sensitivity because if your body views gluten as foreign and not friendly, then you're going to have an immune response against that gluten when you expose that receptor to gluten and you can see there, then you've got the gluten just above it. The shape of the gluten fits very nicely into that receptor and it activates it and helps to create what's known as an inflammatory cascade. Now that's a simplified diagram. What I'm going to show you next is a more complex diagram.

If you can follow me here, if you look on the screen, what you're seeing here is you're seeing the big pink rectangular structures on the top of this graph. Those are cells of your small intestine. The ones on the left are healthy-looking cells and the ones on the right, they look a little bit more permeated. Those are damaged cells. This is what's known as the epithelial barrier of your gut. This is the single layer of cells that line the course of your gut. You'll see a little number two there in yellow, and you'll see that that healthy cell is next to that unhealthy cell and there's a gap between them, that's leaky gut.

What happens is gluten creates an injury to the lining, to the zonulin. Remember that protein that anchors the gut cells together, and then it creates this gap or this leak and now, those little green spheres that you see in this diagram, that's gluten. Those can now travel past your gut lining and you'll see one of the first things that happens is that they're presented to that big purple-looking splash mark with a DC in it, that stands for dendritic cell. It's a type of immune cell and that cell picks up that gluten and it says, "Oh, we're not sure about this." It carries it over to a mature cell. You'll see on that mature DC, you'll see a little structure it's purple and it's sticking up and it looks like an antenna sticking off the surface of that cell. That's an HLA DQ receptor.

Again, it's just a little bit more complex drawing of what I showed you a minute ago. When that gluten is presented to that receptor, there are a couple of different types of reactions that occur, and both of them are immune responses. One of them is called a TH1 response, and the other is called the TH2 response. TH1 response generally leads to a broad spectrum release of chemicals that cause inflammation.

Chemicals like tumor necrosis factor-alpha, chemicals like interferon-gamma. These are chemicals, again, that are released by your immune cells to create inflammatory damage.

In this case, it's in an attempt to neutralize the toxin. You also make antibodies. If you follow that TH2 reaction, you'll see that antibodies can also be produced against gluten. If you look, both of those arrows, whether you're producing inflammatory chemicals or antibodies, they both lead to the same outcome, which is potential for auto-immunity. That's what I want you to understand, is that this very much is a genetic issue. If you have the gluten-sensitive gene pattern and you expose your body to that gluten, your body is going to look at that gluten, genetically, it's just going to look at it as foreign and it's going to try just like it sees a foreign bacteria or a foreign infection, it's going to try to mount an immune response to neutralize it.

As with any battle, with any war, there's something we call collateral damage. That is the unintended consequences of battle. When you shoot a bazooka at a bad guy, missed the bad guy, and hit the building, the building becomes collateral damage to the war. Well, if the building, the proverbial building is your liver, now your liver is taking on excessive inflammation as a result of your body trying to battle gluten. You can develop gluten-related liver damage. If that collateral damage occurs in your bones or your muscles or other tissues, and the damage occurs in those tissues, then that's where we start to see the inflammation and the damage and the dysfunction start to show up.

It's very important that no drug, no pill can block this pathway from occurring. Now, certainly, you can take drugs that block some of these inflammatory chemicals. There's no doubt about it. You can take immune suppressants that block your body's or limit your body's capacity to degenerate antibodies, but then you also create immune suppression and increase the risk of developing cancer. What you can do to stop this entire pathway from occurring is number one, know whether or not you have the genes for gluten sensitivity. If you do, just quit eating gluten because if you quit eating gluten, then you won't present that gluten to that genetic receptor that leads to an outcome of inflammation and destructive autoimmune damage.

Again, diet change. There's no magic in that. There is magic in that if you've never heard this before, it may sound quite magical, but diet change can be a very, very profound impact on your overall health, especially as it relates to the genetics of gluten sensitivity.

Remember genes don't make you sick. You've heard me say this a number of times, gluten sensitivity is not a disease. It's not a disease, it's a genetic predisposition and if you know that you have it, you can change your diet. Having celiac pre-disposition genes does not mean you have celiac disease, just like having non-celiac gluten sensitivity, predisposition genes doesn't guarantee that you'll develop gluten-related diseases. What creates the disease is the exposure to the gluten. That's an environmental dietary change that you can make. Having these genes and subjecting them to gluten can lead to chronic inflammation that's predisposing you to gluten-related diseases.

Hopefully, that helps you understand that whole concept of why testing can be so confusing. Maybe many of you watching this today have had the testing done. You feel better on a gluten-free diet. You're scratching your head, wondering whether you should stay on that diet. Your doctors told you, you don't need to. Some people go so far as to tell you you're hurting yourself by being on a gluten-free diet, which is absolutely ridiculous. You can do zero damage to your body being on a gluten-free diet unless your gluten-free diet consists of a bunch of processed packaged gluten-free foods that aren't good for you.

That diet could be said the same of a gluten-full diet. You could eat a gluten-full diet full of processed packaged foods, it also wouldn't be good for you. If you're following a true gluten-free diet, as we've been spelling out in these modules, there is no risk for malnutrition. There is no risk for developing other forms of disease. The real risk come when people go gluten-free the wrong way. They go gluten-free by eating nothing but processed foods. A bunch of processed grain-based foods that are labeled gluten-free that aren't technically gluten-free and they continue to struggle.

Anyway, let's talk next about how common gluten sensitivity is. This is the question that I get back after I talk about genetics. The first question most people want to know is, well, how many people have these genes? How common is it? The true answer is we don't know, but the speculated answer, in essence, most experts believe, I've mentioned this before, that celiac disease affects 1% of the US population. That's the same for industrial countries. US, same in great Britain, et cetera.

We know that non-celiac gluten sensitivity affects an estimated 6%. Now, these numbers were based off some research published in the World Journal of Gastroenterology in 2017. Again, any research study that tries to ascertain the entire global population incidents is going to be limited because you can't test everyone. The resources aren't there and the time and the effort isn't there, but here's something else to chew on, unpublished data from Dr. Kenneth Fine.

Dr. Kenneth Fine runs a lab called Enterolab in Dallas, just north of me. I'm in Houston, Texas. He's the director of Enterolab and he's a gastroenterologist and he's been doing GI research and gluten-related research for decades. His research, again, non-published at this point, but he speculates that up to 33% of the population has some degree of gluten sensitivity or gluten intolerance. I tend to agree with Dr. Fine. In my experience, we've done thousands and thousands of DNA tests over the years, and I see it play out in that same zone of percentage. I see the prevalence rate to be much higher, at least in my experience when somebody has pre-existing auto-immunity.

If you've already been diagnosed with an autoimmune disease, the likelihood that you're going to have gluten sensitivity predisposition genes is extremely high, much higher though, say, than in a healthy individual who doesn't have pre-existing autoimmune disease. That's the best we can say as far as how common is gluten sensitivity. Again, there's no exact answer because the number is probably going to change as science evolves and we learn more about it, but to date, these are the numbers that we have.



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Here's something else that we know historically speaking. Since 1974, there's been a five-fold increase in the incidents of celiac disease. In this study done, you can see the conclusion was during a 15-year period, celiac disease prevalence increased fivefold overall in the US since 1974. This study was published in 2010 in the Annals of Medicine. Again, from 1974 to 2010, which is a period of about 36 years, we saw a five-fold increase incident in celiac disease, not non-celiac gluten sensitivity, but in celiac disease.

Here's what else we know. This is the estimated global prevalence of celiac disease that in the 1950s, the estimation-- Look, there are a lot of reasons why this data could be misleading or misconstrued. In the 1950s, it was estimated 0.01% of the population had celiac disease. That could have been because we barely learned about what caused celiac disease until about 1952.

It was actually in the '40s, that Dr. Willem Dicke, the great pediatrician, observed that children in his hospital with what was known at the time as the celiac affliction, which what happens is these kids would have diarrhea and vomiting and they would emaciate, that when grain shortages happened during World War II, that they recovered, spontaneous. He was the one that observed that it was the grain ration that actually led to this spontaneous remission in these kids with the celiac affliction. He was the first to really publish any research on what caused it.

I don't know that our data in the 1950s, that we could say it was solid because we were just learning about the incidence of celiac disease or about the cause, I should say, of celiac disease in the early 1950s. That being said, in the 1970s, where we had 20 more years of data, 0.03%, and then in 2010s, the number of the prevalence has gone up by 1%. Now, some would argue that that's because we have better testing, we have better methodology for identifying celiac disease and I would say, yes, we do, that is absolutely correct. Endoscopes have come a long way. Even blood testing, as much as it has flaws and potential for error, it's also come a long way.

We've got technologies that actually do help us to detect and so what we don't know is, is this an increase in prevalence, or is this an increase in accuracy of being able to identify it? Nobody can really answer that question. Here's what we also know, that wheat accounts for 50% of the total caloric intake in industrialized countries. Now, that wasn't always the case. We know that the consumption of wheat has gone up since the 1950s. 50% of total caloric intake. Most people, what is it? Cereal for breakfast, a sandwich at lunch, pizza at dinner, or some type of pasta. Everything is super, super bread heavy.

You also look to what they do with a lot of the grains. To make bread, they add vital wheat gluten to make it chewier, to increase the texture of the grain, they add gluten to it. A lot of your pizza crusts, for example, are super chewy, it's because they've added extra gluten. Not only is wheat 50% of calories total in the diet, but a lot of the wheat has been enhanced, meaning the wheat flour has added gluten to it. You're getting almost a double bomb, the native gluten from the wheat, but then also the added gluten to give the chewiness to give the gluey, chewy effect of the bread.

We also have a study here on modern wheat breeding and how that could increase the occurrence of celiac disease. In the study, it suggests that modern wheat breeding practices may have led to an increased exposure to celiac disease epitopes, meaning the modern wheat increased the incidence or the opportunity for that gluten to do damage to these genetically susceptible individuals. It's important to understand that we've got-- There are a lot of things that have increased the incidence. One is we eat more grain as a population. Again, 50% of your caloric intake. Number two, we've got changes and alterations in the way farming is done.

We've got hybridization of grains and genetically manipulated grains, we've got different chemicals and pesticides and other things that are added to grains. We'll get more into that in upcoming modules, stay with me because we're going to do a deep dive on all those things so that you can understand them. Why is genetic screening a good idea? This is where I really, really push for genetic screening.

I actually wish the government, the same way they push children's vaccines would push genetic screening at birth for gluten sensitivity because I think it would save our healthcare industry trillions and trillions of dollars over the next many years if you could identify how a person should eat, or how to direct a person's diet at birth, as opposed to waiting till they become sick. They can't work and they're non-functional and now, they're a burden to themselves, they're a burden on society, they're depressed, they're sick, they're angry, they don't know what to do, they're confused. The doctors don't understand, and now we just have this conundrum.

If you look at the US alone, there's 46 million cases of autoimmune diseases. One in seven people. We're not talking about small numbers. Genetic screening, in my opinion, would be the cream of the crop in terms of getting control, getting better control of our autoimmune reactivity in this country. What this study is showing, you see increased prevalence and mortality in undiagnosed celiac disease. Remember, this is just celiac disease. This study wasn't done on non-celiac gluten-sensitive individuals, it was just on celiac patients but during a 45-year follow-up, undiagnosed celiac disease was associated with a four-fold increased risk of death.

You are four times more likely to die by not getting a diagnosis. That's a tremendous increase in risk. The prevalence of undiagnosed celiac disease seems to have increased dramatically in the United States during the past 50 years. In essence, if we don't diagnose it, the person's mortality rate goes way up in four-folds. We're not just talking about a diet change here, folks, we're talking about life and death. We're talking about the increased risk of dying as a result of not having this information to be able to take action on it. Again, simple diet change.

What's your other option? If you don't have genetic testing done, I've mentioned, genetic testing, I've also mentioned the quiz that my organization has put together, gluten-free society, that it's free, that anyone can take. Feel free to-- We'll put a link under this, feel free to share it with as many people as possible. Your other option is a gluten elimination diet. A lot of people go this option too. Here's some of the pitfalls and problems I see in that diet. Number one is they do it wrong. There's a 12-week learning curve. About, a 12-week learning curve to learning how to go gluten-free properly. I mean properly, I don't--



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Going gluten-free is not, "Hey, I'm going to order-- I'm going to eat rice cakes all day long and Starburst because those don't have any gluten in them." That's not a gluten-free-- It is a gluten-free diet, technically, but it's not healthy diet. You're not going to re-achieve health by eating an unhealthy gluten-free diet. It's a learning curve. It requires a hyper diligence without evidence. It's faith-based, meaning you've got to really feel strongly that this is the right move to make. When it comes to diets, most people don't feel strongly enough to embark on a 12-week learning curve of a diet that they're not sure whether or not it's even going to have the outcome that they desire.

That's just been my experience psychologically in decades of clinical work with people. It requires comprehensive understanding of what gluten is. Again, part of this glutenology health matrix course is to help you all understand what it really is. People often fail in the diet due to a non-comprehensive approach to changing their diet and lifestyle, meaning, yes, they change their diet, but they don't change their lifestyle too. They have all these other bad habits, and they don't see the outcomes, when they don't see the outcomes they're looking for, they quit or they have pre-existing inflammation or existing disease that often requires nutritional support.

The analogy is like this. If you're driving your car and you roll over and a nail gets into your tire and pops it. Imagine that the nail is gluten, the gluten pops your tire, so to speak, and you pull the nail out of the tire, you pull the gluten out of your diet. Guess what? Your tire is still popped. The damage that it created didn't just go away, because you removed the offending agent. Sometimes the body is in such distress, inflammatory stress, that it needs a jumpstart.

For many people with gluten issues, it needs a nutritional jumpstart. You've got to really look at the vitamins the micronutrients, things like vitamin C, and the minerals like zinc and calcium and chromium and selenium and looking at these things because your body needs these vitamins and minerals to heal. In order to heal the flat tire, in order to fix the flat tire, that requires a degree of work. You need a jack, a tire iron, you need muscle. You've got to have the ability to patch that tire or whatever that looks like.

Well in your body, the work that happens in your body, all those elements, you need the vitamins, you need the minerals, you need the carbs, the fats, the proteins, the nucleic acids, the amino acids, you need the water. All those nutritional building blocks are necessary for that proverbial gluten pop tire to heal. If you don't have those things lined up, then you may go on a gluten-free diet, but because your body doesn't have what it needs to heal the damage that gluten caused for the past decade, then you might not see the response that you want. Gluten elimination diet is fine. It won't hurt you to do it, but if you're going to do it, you need to dedicate all of your efforts and resources at doing it. Don't play around.

Part of our mission is to help people. It's to help people get answers as it relates to the gluten-free diet. One of the things that I did when I decided to create this masterclass for you, was I got a hold of our lab director and said, "Look, we need the cheapest possible price that you can give us" because a lot of people are going to want to be genetically tested because they're going to be educated about how



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important it is. What we've done is we've created a code for you to use, where you can get and I don't think we'll ever see a lower cost on this lab.

You can get the genetic testing done for \$299, it's regular \$385. It's almost \$100 off. It's never been this cheap. We've never been able to get the lab to run it this inexpensively for us. Make sure, because you're taking the time out with me to watch the glutenology health matrix, make sure that you use the code, Matrix when you check out to get that discount. We want to offer that to you again as just our way of saying, thank you and as our way of supporting you in your endeavor and effort on going to a gluten-free diet in a serious way.

As always, if it's not in your budget right now and you just want to have some information that might help guide you in that direction, we have a free quiz that was doctor-developed online and that's free, you can take that as well. We'll put a link below this video for you to access that quiz and make sure, again, share it with as many people as you know who might benefit from a gluten-free diet or whom you might suspect need to go gluten-free because together we can help more people.

Remember, 46 million of you have autoimmune disease, one in seven people. We know that the number one cause or trigger for autoimmunity in the world, that's been studied to date, is gluten sensitivity. Help us get this information out into the hands of the people that need it the most. Together, we can save a lot of lives. As always, our goal here is to save 100 million of them over the course of our efforts and educational outreach.

I want you to stay tuned for module four because I'm going to help you understand why gluten sensitivity is on the rise, I'm also going to help you understand some of the most common mistakes people make when they're going gluten-free and how to avoid what we call gluten-free whiplash. I'll see you in module four.

**[01:11:53] [END OF AUDIO]**