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**Dr. Peter Osborne:** Hey, Dr. Osborne. I'm back for the Glutenology Health Matrix module number two. All the things you didn't know that gluten was related to. In this module, we're covering common symptoms of gluten exposure. We're also going to be covering the diseases either caused or contributed to by gluten. Get out your pads and pens and get ready to take notes. Now, the clinical symptoms of celiac disease, again, I taught this in module one. This is a refresher course, but clinical symptoms are extreme weight loss, diarrhea, stomach pain, bloating, and vomiting.

Now remember, I also said that about 1% of the population has celiac disease, but most of them don't have a diagnosis. One of the reasons why is the classic clinical symptoms aren't really classic they're what's taught in school as classic symptoms, but most symptoms of gluten sensitivity are more waxing and waning, are not really what we would call full blown disease, they're the subtle breakdowns of the body. You have to understand classic definition versus what is actually going to pan out over time.

Symptoms can be unusually asystemic, and we know that different people can respond to gluten in different ways. Let's dive in to what we know. The gluten sensitivity Hydra, those have been following me for any length of time. Know I'm a fan of mythology, the Hydra, the fabled Greek creature that was slain by Hercules with seven heads, seven fabled heads and if you cut one head off, it would sprout two heads to take the place of the one. This is very likened to the way I look at the way medical diagnosis and medical treatments work. If you have somebody with a symptom, generally, the doctor takes a whack at the symptom with his sword, his prescription sword pad, and tries to suppress that symptom.

Some drugs work really great at symptom suppression, the bottom line though, is that the drug side-effects and the accumulation of the drug usage can create new symptoms. Oftentimes why, when you go to the doctor, you get a drug and then six months later, you get another drug to treat the symptoms of the first drug you started taking. It's a lot like that Hydra where you cut one head and two new heads sprout up. Gluten is like that because gluten can cause so many different symptoms and if doctors aren't trained to recognize these symptoms again, they're taking whacks at the head of the gluten sensitivity Hydra, and not really resolving or solving the underlying core of the problem.

Treating symptoms with medicine does not resolve the origin of a patient's problem. I'm going to put up an article for, you can see a gluten sensitivity of many headed Hydra. This was published in the *British Medical Journal*, conferring, all the things that I'm getting ready to teach you and talk to you about the spectrum of dysfunction linked to the exposure to gluten. This next diagram, I'm going to put up on the screen for you, you can see on the left hand side, the classic gastrointestinal manifestations of celiac disease, diarrhea, vomiting, distended abdomen, in kids we'll see failure to thrive meaning babies won't grow.

That's a common hallmark of early celiac disease, but again, very rare when you consider the host of problems on the right side of this diagram. You see the different disease symptoms, neurologic and psychiatric manifestations, oral mucocutaneous



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and facial manifestations, dermatologic, meaning the skin manifestations, hematologic, meaning how it

manifests in the blood and then hepatic, meaning your liver, how it manifests potentially in the liver.

Then you can go onto the next row in the next line and just follow the image, you see all of these different diseases that are linked up to gluten exposure, which is why many experts don't look at gluten sensitivity and celiac disease the same, because again, gluten can cause celiac disease, but celiac disease is a rare manifestation of gluten sensitivity to the order of magnitude of about 1%.

All these other symptoms 6%. Remember there's a scientific consensus today is that approximately 6% of the population has gluten sensitivity issues. 1% has celiac, six times more people have non-celiac gluten sensitivity issues than have celiac. We've got to start getting this information out to the masses, because if you don't know to look for it, you will never even understand the laundry list of symptoms and diseases I'm going to be sharing with you today are linked up to gluten sensitivity.

Just in this particular diagram, one of the big ones that we see with kids is enamel defects from the teeth. You've got a child that's super prone to cavities every time you go to the dentist, there's more cavities. Gluten is not-- or I should say sugar is not the only trigger. Gluten can destroy the enamel. There's an autoimmune reaction that can occur on the enamel building proteins of your teeth. That's a common one manifestation is enamel defects on teeth.

We've got symptoms or diseases like psychiatric conditions. Gluten has been related to depression and it's been related to schizophrenia, as we'll dive into here in some of these other slides, I'm going to cover with you. Gluten, I like to call it the great deceiver. It's because it can do so much. This one family of proteins can do so much to create so many different problems.

Let's talk about why it can deceive as well. This study that I'm going to put up on the screen for you, you see here, it says the opioid effects of gluten exorphins asymptomatic celiac disease. Let's talk about what that means.

Gluten can act like an opioid. Now, if you don't know what an opioid is, an opioid is a one of the most potent types of painkillers. I just said, gluten can act like an opioid, meaning that some people gravitate toward eating bread and pasta and cereal because when they eat it, they feel better. Their pain actually reduces as opposed to increases. You'll see at the bottom of this slide, gluten can be degraded into several morphine-like substances named gluten exorphins or gluteomorphins. These compounds have proven opioid effects and could mask the deleterious effects of gluten protein on the GI lining and the GI tract function.

Meaning that, remember we said the classic symptoms of celiac disease were gastrointestinal pain, one of the symptoms? What this research is saying is that gluten acting as a pain reliever can actually mask its own toxicity. Where the gluten might be causing you pain, it's also part of your pain medicine. What you're taking in

in your diet is creating the inflammation, but it's also medicating the inflammation that it's creating.

This is why I call it the great deceiver, because you can eat gluten for a number of years and be relatively asymptomatic until your body develops resistance and enough damage that the morphine-like qualities of gluten are no longer effective at managing or controlling your pain. Now, if you've ever been to pain management you know how this works, the longer you're on the medicine, the less effective it becomes, the more the doctor has to increase the dose to get the same pain control effect.

Gluten can work the same way, so this can take a number of years for this effect to really start to manifest. One of the more common questions I get asked is, "Dr, Osborne, I've been eating gluten my whole life. Why am I just now starting to show up with symptoms?" This is another reason why gluten can be a great deceiver because it can mask its own toxicity for years, it can mask itself until it rears its ugly head and that point is usually at the point where your body can no longer continue to keep up with the damage.

I said earlier that gluten sensitivity and gluten intolerance is not a disease, but that it can cause or contribute to disease. This diagram represents some of the common things that gluten can cause or contribute to as you see, bone loss and asthma and fibromyalgia and thyroid problems, probably one of the more common things that that gluten can contribute to, psychological disease, cancer non-Hodgkin's lymphoma is a type of cancer linked to gluten sensitivity and then rheumatological arthritis.

In module one, I shared with you how I got started in all this by helping a little girl named Ginger who had terminal juvenile rheumatoid arthritis and when we changed her diet, we saved her life. Let's talk about the conundrum, I said earlier, gluten is a great deceiver. I said that it can do damage, but it can mask the damage that it's doing. I also said that damage accumulates over time, and this is component I want you to understand this disease-- you don't wake up tomorrow with diabetes, you don't wake up tomorrow with rheumatoid arthritis or hypothyroid or any other manifestation of disease.

Disease development takes time. I'm going to put a slide on the screen for you and show you what we're talking about. You can see here that you have what are called-- you look at this blue bar going across screen, it says pre pathological changes. Then you see a diagram above that, it says preclinical syndromes, low or high normal blood values, low or high penetrance of genetic variants and epigenetic modification.

Let's make sense of this diagram. Pre-pathological changes means these are the symptoms that occur before the lab work is so abnormal that the doctor can say, Mrs. Jones you have fill in the blank disease. Preclinical disease is vague. This is the problem with gluten, this is the problem with gluten's relationship to autoimmune disease is that you could be eating gluten for five years or 10 years and you're relatively okay. You get into seven year eight, nine, 10 of heavy gluten exposure and now your body's starting to subtly show signs of wear and tear.



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Most doctors view that wear and tear as changes with aging. I would warn against that thought process. If you believe that your body is intentionally designed to break down to the point where you lose function or to the point where you require five or more medications which is what the average 45 year old in the United States is taking, then you've been sorely misled.

These preclinical signs show up early but most people ignore them. Now this is your general fatigue, your general brain fog, oh my joint hurts a little bit, why is my knee catching? These subtle things that can happen that aren't overt Frank disease. These are the again pre pathological changes that can occur up to the point where you get a diagnosis. Diabetes is probably the most classic example that I can give you of a disease where we know the chronic ingestion of something can take years to develop.

The chronic ingestion of sugar-- you take a kid at Halloween. That child that Halloween is not going to have diabetes the day after Halloween. If that child is reared on sugar and eat sugar as a regular staple in their diet, you multiply that over a years, initially, you'll get pre-pathological changes like fatigue, attention, behavioral disorders. You'll get things like dark circles or bags under the eyes, you'll see children complain of stomach aches or pain, you'll see them do poorly in school. These are pre-pathological changes that they're eating sugar.

You fast forward 20 or 30 or 40 years in what do you see? You see those prepathological changes turn into what we can now identify as an overt disease, in this case, in this example, diabetes. As it relates to gluten, as I'll show you here in just a few moments, every disease you see on this list follow the same trend. The unique thing about gluten is it's very rare that it causes an acute manifestation of Frank disease. Generally, it's the longer you're exposed to gluten over time and the more gluten exposure you have over time, the more inflammation your body is basically burdened with and the more subtle the breakdown occur until your body can no longer continue to adapt to the way that you're treating it.

It's important that you understand that disease doesn't happen tomorrow. When you hit the-- women especially, my experience is when you hit the age of 40, 45 and you feel like your body is starting to fall apart, that is not because of what you did last week or last month. It is what you have been doing your entire life. It is the accumulation of your choices in your lifestyle and your diet over those many years that have led to the outcome that you're facing in your health.

Let's talk about some of those common symptoms. I said oftentimes there's symptoms that occur before Frank or overt disease is diagnosed. These are some of your common symptoms of gluten exposure before major disease sets in. When we look in the GI tract, constipation, loose bowels, heartburn, indigestion, bloating, excessive gas, these are all very common. Again, gastrointestinal manifestations of early gluten exposure. We have mental symptoms brain fog, fatigue, depression.

I'm not talking about full blown clinical depression where you're on the verge of suicide, I'm talking about depression as in you're depressed but you can't quite figure out why. Like mild subtle before Frank disease sets in and irritability, mood swings all



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mental manifestations of gluten sensitivity or gluten exposure. We have some of the immune symptoms that can develop. This might be a person that has really aggressive outdoor allergies. I've seen this countless times where people come to me and say, Dr. Osborne, I'm allergic to outside.

Every time I have allergies year round because in the Fall, I have these allergies, in the Spring, I have these other allergies and in the Summer I have these different allergies. When they go gluten-free guess what happens to their seasonal allergies? They've vastly diminish or they can go away. If you're one of those that has aggressive outdoor allergies, it might be a hallmark symptom that your body is so busy fighting gluten that it doesn't have the immune resources to fight the environment as well. You lose the war to the environment and that manifests as allergens.

Shortness of breath is another very common immune symptom. This has to do with the immune function of your lungs. Recurring infections especially in the sinus cavities, especially in the throat, if you get a lot of kids who've had their tonsils removed, tonsillitis remember, your tonsils are a large clump of immune cells clustered in your throat. Their primary job is to protect you from what you're eating.

When you're eating things that irritate your immune system, your tonsils will swell, they'll get enlarged. That's an early warning sign potentially of gluten exposure or other food allergen exposure are enlargement of the tonsils or what are known as tonsil stones. If you've ever seen those, those are the little white clumps that can develop and pack into the tonsils. If you ever open your mouth and say, aah, and look in the mirror and shine a light down there, sometimes you'll see like white posy patches or white basically little balls that are lodged into the holes of your tonsils or the tune crypts of your tonsils.

We'll also see recurring infection. Again, strep throat, recurring upper respiratory infections where you've used antibiotics time and time and time again because they the infections keep coming back. These are all potential symptoms that gluten might be playing a role. Then chronic coughing. This is actually one that I could speak of personally. I am gluten sensitive and one of my primary early on symptoms with gluten exposure was chronic coughing.

I would cough at night. Every night, I would lay down to go to bed, I would cough for about 30 minutes. I was in good shape. I didn't have any major health issues. I would just cough at night before going to bed. It was non-productive. When I figured out it was gluten sensitivity and I quit eating gluten, I haven't had a chronic cough issue since. Chronic cough is another one of those that can be again early onset symptom.

Then we have neurological symptoms. Headaches are very very common. Again, I'm not talking about full blown migraine where you've been in the neurologist and had three or four MRIs to try to figure out what's going on with you, I'm talking about early onset headaches. There are a number of different kinds of headaches but even tension headaches can be chronic tension headaches where the muscles are so tight because gluten can cause muscle cramping and muscle spasm especially along the base of the occipital muscles.



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That can create chronic tension headaches. You could have what are migraine-like headaches without a diagnosis of migraine. You could have sporadic or intermittent headaches, cluster headaches et cetera that can be linked to gluten exposure as well. Numbness and tingling of the extremities. Another very common hallmark of gluten exposure. Now numbness and tingling of the extremities, this is one of those where maybe you have tingling or numbness in your fingertips. It starts there.

I'm not talking about something like sciatica where you have pain that travels down your buttock into your feet. I'm talking about that the numbness and tingling is in the extremity. It's in your feet. It's not traveling down the leg or down the arm. It's actually just in the hands or the feet directly. Carpal tunnels symptom that actually gluten can manifest as and a lot of people get the carpal tunnel reduction surgeries because they started to develop numbness or tingling in their hand as a result of that tunnel compressing the median nerve.

Then we also have dizziness and loss of balance. This is another hallmark early onset gluten exposure. If you find yourself becoming more clumsy over time, finding yourself dizzy, losing your balance, where you didn't use to this might be an early warning sign for you that gluten is a problem. Then we have the pre-menstrual symptoms and this predominantly for women around your period there are different types of pre-menstrual what they're now calling premenstrual dysphoric disease.

That is our premenstrual dysphoric disorder PMDD but there are classes. There's one that manifests as anxiety. There's a premenstrual class or type that manifests as anxiety. There's another one that manifests with swelling or bloating or water retention. There's another one that manifests with severe mood swings and irritability and mood changes. There's another one manifest with severe sugar craving and food cravings.

There are different types of premenstrual dysphoric symptoms. Women, if you are finding that before your cycle, you become difficult to tolerate by your husbands or by the people around you or even by yourself, you might consider that gluten could be contributing to that hormonal change that leads to hormonal imbalances that make you most susceptible right before you go into your period. Then we have muscles and joints, the symptoms. Muscle stiffness sometimes referred to as stiff man syndrome. I've heard people say, I've always been tight. My whole life. I was one of those people. I was tight, my whole life couldn't touch my toes. When I went gluten-free, everything just started to open up and loosen up a little bit better. Muscle stiffness is a common symptom early onset, again, of gluten exposure. Physical pain in the muscle physical pain in the joint, can be a manifestation as well as weakness. Muscle weakness common hallmark symptom of gluten exposure.

Then we have the inability to lose weight and we said earlier the classic symptoms of celiac disease were weight loss because of the malnutrition and the diarrhea. The more common symptom of gluten exposure over time is actually weight gain. For every pound that you store in fat on your body, your heart has to accommodate that by growing extra miles of blood vessels to feed that pound of fat.



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That puts more pressure on your cardiovascular system but that pound of fat also is more pressure, gravitational pressure on your joints. It can create some joint compression and it can lead the osteoarthritic changes of your joints. The wear and tear. The more weight you carry, the more your joints have to cushion that carry. What we oftentimes see as people eat gluten over time and they gain more and more weight, it creates joint pain. Not because necessarily even the gluten is inflaming the joint but because the fat storage is becoming greater than the joint's ability to cushion itself. We start to see wear and tear happen in the joint.

Then we get skin disorders. Skin problems associated with gluten very commonly or hives is very common. That actually is one of the more acute manifestations. I've seen a number of people with chronic urticaria hives develop where they've been to every expert, every specialist and they were tested for all types of environmental and outdoor allergens. They were given allergy drops and allergy shots. Hives wouldn't go away. Their last option was steroids but they didn't want to take that option.

They were just trying to figure out if there was something in their diet. There can be very very often, gluten causes a hive outbreak and again, it's a more of an acute reaction but what happens with it is it can become chronic. The more exposure over time you start initially developing hives, they come and go. They ebb and flow but as time goes on, they just stay with you. The more gluten you consume the more they solidify and stay with you.

Then we have one of the other most common manifestations in the skin of early onset gluten exposure is eczema. If you struggle with eczema generally people find the eczema in the folds of the skin behind the knees and the elbows, babies, in the butt cracks. Those areas that are most susceptible to eczema, there are areas where there generally tends to be more moisture, more lack of sunshine but gluten is a very very common cause or trigger for eczema. Very very common. Be on the lookout for that. If you have eczema or struggled with eczema, then you might consider that gluten is something you want to look at.

I'll put up another diagram just to help you understand. Those of you are watching and you're not sure or maybe you haven't been tested for gluten sensitivity but you suspect it. Some of you watching, may already know, you were diagnosed with celiac disease or somebody somewhere along the line, a doctor somewhere along the line told you you were gluten sensitive and to avoid it, you're just here to learn.

Some of you are here because you suspect gluten might be your problem. Part of our mission is to help you understand whether or not going gluten-free is the right move. Aside from that we have a free quiz that you can take. We're going to put a link under this video that you can click on and you can take this free quiz and it's going to help you understand whether or not gluten might be the right move for you to move in the direction of gluten-free diet.

Although the quiz is not diagnostic, I don't want you to take that impression away. It can just give you a general idea that if you come test positive on our quiz, that should prompt you to go visit with your doctor to get deeper and more in depth analysis to see whether or not you need to dedicate the time, effort, energy and

resources to changing your diet for the rest of your life because gluten sensitivity, as I said, is genetic. If you are gluten sensitive, you need to understand that it doesn't go away.

You don't just get start eating gluten again. Once your problems go away it's like a diabetics, they don't get to start eating sugar again once they've controlled their diet to get their diabetes under control it really has to be a lifelong switch for them in order for them to maintain good health. It's the same thing with gluten sensitivity. When you get your symptoms under control it's not free rein to start eating gluten again you'll be sorely disappointed.

Anyway, got that link below this video that you can click on to take the quiz to help you to determine whether or not you need to go gluten free and then to the next module-- stick with me through module three as well because I'm going to be talking more in depth on testing methodologies, questions you can ask your doctor like all the ins and outs of what you need to know before you make that doctor's appointment so that when you go in there, you're armed and prepared with information so that you can get the most accurate assessment for gluten sensitivity.

I talked about the pre-symptoms. Now we're going to dive into the disease situations associated around gluten. I want you to keep something in mind. Gluten intolerance or sensitivity is not the sole cause of the following diseases. I don't want to be the little boy who cried sheep to say gluten causes everything for everyone all the time. That being said, gluten causes a lot of problems for a lot of people. There are a lot of diseases, we're going to go through over a hundred.

Does that mean that gluten is the only cause or the only contributing factor to these conditions? No. I want to be very very clear because some people will go gluten free for two weeks or three weeks they'll say, Oh my disease didn't go away. Gluten-free diets don't work. Remember most chronic diseases are multi-factorial meaning there's not one smoking gun. There are several different pieces of the puzzle that have to be solved.

I'll be talking about that in an upcoming module too, what those different pieces what those different factors are, so that you can maximize not just your gluten-free diet but also your lifestyle choices to help your body help itself. Again, in cases where a person does not have a known cause for their disease, this is where gluten sensitivity you should really get with your doctor to rule it in or out.

If you have any of these medical conditions we're about to talk about and your doctor said Mrs. Jones, you have fill in the blank disease. We don't know why but we want you to take this medicine for the rest of your life as the solution. If your disease is on this list that we're about to cover, you need to have that conversation about gluten sensitivity with both yourself and probably your health care practitioner to try to help you to determine whether going gluten free is a good move or is going to help you in your endeavor at improving your condition.

Let's talk about some of the diseases linked to gluten. What I'm posting up on the screen for you here is a study published in the journal, *Clinical Medicine and*



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Research on the manifestations of silent celiac predominantly extra intestinal. You're going to see this term. This is a new term you're going to see popping up in this. We did in the last module we defined some different terms. If you remember, we defined gluten intolerance, gluten sensitivity, gluten allergy and celiac disease.

In this module, we're going to be adding a new term called silent celiac disease. Bear with me but you can see in the study this is a list of different conditions that are known to be manifestations. What are known as extra intestinal or symptoms outside of the intestine that we know gluten can cause in the absence of celiac disease. Hence the term silent celiac disease. I don't like that term. A lot of researchers use that term and the reason I don't like silent celiac disease is it delineates that a person has celiac disease when in fact, they don't have celiac disease. It's not silent celiac disease, they have an extra intestinal manifestations of gluten sensitivity, just for clarity sake so

You can see here auto immune disorders. Any of you out there watching this now, if you've been diagnosed with any form of autoimmunity, you should know that gluten is the number one trigger for autoimmune disease that we know of period in the medical literature in science period. Gluten, number one cause of autoimmune disease. If you have any form of autoimmune disease, you should be ruling gluten sensitivity out immediately. If you're trying to again overcome and improve your health. You see in this case autoimmune disease the most common probably in terms of manifestation of gluten is hypothyroidism particularly Hashimoto's disease.

You also see in this list dermatitis herpetiformis which is a skin blister manifestation of celiac. You'll see disease like anemia, osteoporosis, nerve damage. You'll see here in this examples epilepsy, cerebral calcification, neuropathy, cerebellar ataxia which makes you dizzy and chorea which is incoordinated muscle movements and then infertility and subfertility meaning you can't get pregnant or you have a hard time staying pregnant.

Ladies, if that's you, you should know this, that gluten sensitivity is the number one cause of unexplainable fertility issues in females. Gluten sensitivity number one cause, so if you find yourself in this quandary where you're going to be going to the reproductive specialist to have hormones injected in you because your body is not either becoming pregnant or carrying long enough without miscarriage, you need to look at a gluten-free diet. That should be a top priority. We also have non-alcoholic fatty liver disease and unexplained chronic hypertransaminasemia, which is a condition that affects the liver.

Again, this is just one published study published in 2007. This information at this point is well over a decade old. I'm going to show you another slide. Bread madness. This is a quote from Dr. Peter Green. Those of you may know who he is, those of you who don't, he's the director of the Columbia University celiac disease center research facility in New York. His direct quote, "An emerging group of people with gluten sensitivity has such psychiatric and neurological disorders as schizophrenia, ADHD that's attention deficit hyperactivity disorder, depression and bipolar syndrome and a higher rate of some antibodies.



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Schizophrenia used to be called bread madness and that's true. There are a number of reasons for that. We know that gluten itself can create antibodies in the brain that can trigger schizophrenia. We've seen research studies that show that schizophrenics do really well, many of them, not all of them, but many of them do really well going gluten free. The problem is getting a schizophrenia to agree to go gluten-free. That really is where the biggest conundrum is in that community.

We also know that certain types of hallucinogenic molds could contaminate bread. One in particular called Argo, which would also cause hallucinogenic problems creating a madness as well. You've got bread madness in more than one way. You've got the mold in the grain but then you've also got the gluten in the bread creating the problem. You can see here research study on gluten psychosis, confirmation of a new clinical entity. This study published in the journal *Nutrients* in 2015 linking non-celiac gluten sensitivity, again non-celiac gluten sensitivity to psychotic episodes.

If you've ever had the feeling like you thought you were crazy when you eat, then this could be hopefully, a wake up call for you to look at your diet a little bit more closely particularly looking at gluten.

Let's dive into more of the list. Now I'm not going to go into depth about every single one of these conditions. We would be here for weeks if we talked about every one of these in detail. I do have a special bonus. For those of you who actually have purchased the complete masterclass the Glutenology Health Matrix, we're going to put links to many of these diseases in the notes for you so that if you want to get more in-depth detailed scientific information specifically about each one, you can do that but let's dive in.

Angina Pectoris, otherwise known as chest pain or pressure. I've seen this be the case for many men in particular who thought they were having heart attacks go to the hospital, they've had all their tests done in the hospital, they were cleared of a heart attack but they still had that chest pain or chest pressure and it was actually gluten that was contributing to the inflammation around the muscles and in the heart itself.

There's another condition of the heart called pericarditis, which is inflammation around the sack of the heart that can happen as a result of gluten exposure and that can also lead to Angina or pain in the chest. Anorexia, we know that again one of the hallmark symptoms of celiac disease is anorexia, meaning weight loss.

Then Immunoglobulinopathies, what does that mean? Immunoglobulinopathies are diseases where your body is typically under producing antibodies. If you've heard of IgG insufficiency, some people are out there in the world of medicine getting intravenous immunoglobulin G (IVIG) therapies for their immune condition because their own bodies aren't making enough IgG. This has actually been linked to gluten sensitivity. I've seen several people who had pre-existing conditions of that nature go gluten free and do dramatically better with their low levels of antibodies. We see gluten-free diet help improve their body's own ability to start producing antibodies again. Immunoglobulinopathy, common.

Antiphospholipid syndrome, anxiety. I mentioned that one earlier. Apathy, Aphthous ulcers or canker sores. A colleague of mine did a study. It was a random study where he just polled people with gluten sensitivity and asked for their symptoms and put them in order from greatest to least. What he found was that canker sores or mouth ulcers were actually the number one reported symptom of gluten sensitivity or gluten exposure.

I can't tell you how often I see this where people who have had canker sores their whole life, they go gluten free and they don't ever get a canker sore again. Very very common to see that. That being said, there are other causes, as I've mentioned earlier there are other causes for canker sores, the herpes virus being one of those other causes. Gluten very very common cause.

Aortic vasculitis, so inflammation of the aortic blood vessel or valve and then arthritis, a number of different forms of arthritis. You can see here I shared Ginger's story with you in module one that was juvenile rheumatoid arthritis but we've got enteropathic and psoriatic and rheumatoid and reactive, spondyloarthritis, there's a whole laundry list. Not even all of them are listed here but that have linkage to gluten sensitivity. You can see in this study arrow pointing over them-- put this on the screen for you in this study. Basically, it's possible that celiac disease may be the correct diagnosis in a patient with polyarthritis even if the patient meets the ACR criteria for RA.

What they found in this research study is that many people went on a gluten-free diet with rheumatoid arthritis but responded really well and their arthritis went into remission by going on a gluten-free diet. I have seen this time and time again. As a matter of fact, part of why I wrote the book published by Simon and Schuster, *No Grain, No Pain* a couple of years ago was this very reason was this correlation, this connection between arthritic conditions and gluten consumption.

We've also got abdominal pain and distension, spontaneous abortion. I mentioned fertility issues earlier. Addison's disease which is an auto immune disease of the adrenal glands, ADHD, children with attention deficit hyperactivity disorder, alopecia hair loss. There's two kinds of hair loss predominantly. There's autoimmune hair loss which is generally referred to as alopecia. The pictures that I'm going to put up on the screen for you are a condition known as alopecia areata which is nummular patch-like clumps of hair loss where you get big bald patches on the scalp. That condition is an autoimmune condition where the immune system is basically destroying hair follicles.

This is just to show some of you maybe who struggle with this but I've seen a number of these types of cases where somebody would come in with this, they go gluten free and then all of a sudden, their hair starts growing back. You can see before going gluten-free, big patches of pure hair loss. Now this one woman in particular in this case, she was getting massive steroid injections in her scalp.

When that didn't actually do much for her, it didn't work, that was actually when she said, I need to find a nutritional solution for this, you can't keep taking medicine. That's when we found that she was gluten sensitive. Five months after going gluten free you can see the after pictures just below and you can see she's got about 80%



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of normal hair growth returning. I should have put my updated pictures up there but my updated pictures we actually have her full head of hair is actually present to date. She's got a full head of hair at this point.

Alopecia, my point is that alopecia areata, specifically the autoimmune hair loss is a known manifestation of gluten sensitivity. A gluten-free diet might just change that for you. If you struggle with that, again, look into gluten as a potential trigger. Then we have anemia, iron deficiency anemia, folate, B12, B6, vitamin C, vitamin D and copper deficiency. These are all nutritionally related anemias meaning the vitamins or mineral deficiencies can actually lead to the anemia.

Understand that one of the reasons why so many different kinds of anemias are associated with gluten sensitivity is because one of the side-effects of gluten exposure over time is malabsorption, malnutrition. It causes vitamin and mineral deficiencies is one of the reasons why anyone with gluten sensitivity or history of gluten sensitivity should take a solid multivitamin. If you're not doing that, you should be doing that.

It's because years and years and years of malabsorption and gastrointestinal dysfunction potentiating nutritional deficiency can set you way back. This is just a way of looking at it as nutritional insurance to help your body maintain itself but anemia very common manifestation of gluten sensitivity.

Then in addition, we've got ataxia. I mentioned that one earlier. Atherosclerosis which is the plaqing of the arterial lining. So many people are so heavy focused on cholesterol as the cause of atherosclerosis especially most cardiologists. One of the reasons why I have two cardiologists on our board of medical advisors for gluten-free society is because gluten is notorious for contributing to a number of different types of heart disease and metabolic syndrome, diabetes and other cardiovascular-related

conditions. I needed some really solid experts on our board of advisors to bring that knowledge and shine a big headlight on that knowledge. Atherosclerosis is a very, very common manifestation of gluten-induced inflammation on the blood vessels. Then you've got autism and learning disorders. You can see here this research study I'm putting on the board here on markers of celiac disease and gluten sensitivity in children with autism. You see a subset of children with autistic disorder display increased immune reactivity to gluten, the mechanism of which appears to be distinct from that in celiac disease, meaning it's not the same as what happens with celiac disease. It's a different kind of gluten-induced inflammation.

Again, the mechanism is more involving the immunologic and/or intestinal permeability component, meaning, as I showed you on the diagram in the last module, the leaky gut creates or contributes to the gluten penetrance into the bloodstream, which then can cross into the blood-brain barrier and start to create immunological and neurological problems of the brain leading to things like the autistic spectrum.

Then we have gallbladder dysfunction. Gallbladder dysfunction is very, very common. One of the most common surgeries performed in the US today, is removal



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of the gallbladder. Many people with gluten issues, and they don't even know they have gluten issues, they have already had their gallbladder removed and they didn't feel better. They had the surgery and they still struggled with digestive problems. Then, when they went to go gluten-free, actually, their problems started to resolve. The surgery didn't resolve their problem but not eating gluten. Remember gluten can damage both the liver and the gallbladder. There's a lot of research studies pointing to that I want you to be aware of. Again, if you're faced with gallbladder-type symptoms, a gluten-free diet may be the trick, may be the thing that you need to investigate.

As I mentioned earlier, Dermatitis Herpetiformis is a blister-like lesion on the skin that represents directly a gluten sensitivity. Actually, Dermatitis Herpetiformis is considered the celiac disease of the skin. Then we have autoimmune hepatitis, polyglandular syndrome. Polyglandular syndrome is kind of a broad spectrum catch-all term that refers to the different organs or glands in the body that produce hormones. Poly meaning more than one, glandular meaning like, for example, your thyroid gland, your ovaries are a gland, your pituitary gland. These different areas that our hormones are produced are being impacted by an immunological response to gluten, creating hormonal dysfunction.

Then thyroiditis, or inflammation of the thyroid, in this case, hypothyroidism or Hashimoto's or Graves Disease, even hyperthyroidism, has a linkage to gluten sensitivity. The toe spots and blepharitis and abnormal blurry vision have been linked to gluten sensitivity bone pain. I see this, particularly bone pain in kids, and often times, it's misconstrued as growing pains. I've seen a lot of kids develop bone pain and excruciating bone pain at night when they're going to sleep. Cut gluten out of their diet and the bone pain goes away. Again, that's not to say that gluten is the only cause of bone pain, but there is a common connection there between bone pain and growing pains and gluten sensitivity.

Fractures. Premature fractures because gluten can cause bone loss or osteoporosis. Cachexia, which is a wasting disease of the body, often times referred to in cancer patients where they develop a wasting syndrome because they've been on chemotherapy for so long, and chemo destroys or it can destroy the gut. Remember, gluten can destroy the gut causing that same wasting-type syndrome.

Bronchiectasis, Barrett's esophagitis or inflammation into the esophagus. This, often times, gets blamed on a bad valve, or on acid reflux, or gastroesophageal reflux disease, but Barrett's esophagitis, often times, is an irritation of gluten proteins in the esophagus creating the problem. Often times, it has nothing at all to do with the acid refluxing.

Bronchial alveolitis, which is an inflammation of the bronchial in the lung, and adenocarcinoma of the intestine, which is a type of intestinal cancer, small cell esophageal cancers, melanoma, which is skin cancer, asthma. You see here I've put a slide up for you on Baker's asthma. Now, there's different ways that gluten can affect people. One is the wheat component. Even though all wheat contains gluten, not all glutens are wheat. There's Baker's asthma, which is where bakers, predominantly using wheat flour, would ingest the flour as they were baking, and



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they would develop asthma because the wheat would irritate the lining of the lung. That's an acute wheat allergy. That's Baker's asthma. Then there's also asthma as an autoimmune condition, and we know it's on the rise, exponentially so, since the 1950's. We know that there are gluten proteins that can trigger asthmatic response.

Cardiomegaly, which is an enlargement of the heart, cardiomyopathy, which is a breakdown of the muscle of the heart. As I mentioned earlier, a lot of forms of heart disease is associated with gluten exposure. Cataracts in the eyes. Celiac disease. That should be the no-brainer on the list. Cerebral perfusion abnormalities. That means blood flow to the brain can become abnormal. Kelosis, which is a chronic chapping of the lips. Chorea. We mentioned that earlier. Coagulation, meaning the blood can get too thick. The chronic inflammation can make your platelets too sticky, causing an increased risk for heart attack and stroke, and coagulation abnormalities.

Most doctors like to treat that with blood thinners while telling you to avoid all greens, especially if they're using something like warfarin and coumadin because they work by blocking vitamin K. Vitamin K helps your blood clotting. Vitamin K is also very, very important. It's an essential nutrient. Crohn's Disease is an inflammatory disease of the large intestine, as is ulcerative colitis. Both of these conditions have been highly linked to gluten exposure. We mentioned chronic constipation. We've talked about cardiovascular disease a number of times but, being the fact that cardiovascular disease sits at the number one position in the US of recognized causes of death, I think it's important to belabor this.

I know many of you who are watching this today are most likely women. That's not to say all of you, but most likely are women. Many of the men will wait until their limbs fall off before they'll go see a doctor. It's important, ladies, that you're taking this information about gluten-induced cardiovascular disease to your husbands, to your boyfriends, to your spouses, and letting them know that there is a connection between gluten sensitivity because most men will pass from some form of cardiovascular disease.

You see here, this is *Cardiovascular Involvement in Celiac Disease*, published in the World Journal of Cardiology, but numbers of documents published concerning celiac disease in conjunction with cardiomyopathy. There have been 33 studies. There have also been substantial numbers of studies published on celiac disease and thrombosis, which is a clotting disorder. Then, again, there's 27 of those and then cardiovascular risks, 17, and then atherosclerosis, 13, stroke, 12, arterial function disease, 11, and ischemic heart disease, 11 studies. That's a lot of studies connecting gluten to the heart. Be aware that those conditions can highly impact the health of the cardiovascular tree and heart.

Then diarrhea, cutaneous vasculitis, which is a form of vascular inflammation. Cystic fibrosis, delayed puberty, failure to thrive. This has to do with a lack of growth. In delayed puberty, we'll see females not reach puberty in time because they're malnourished, because their guts are being destroyed by gluten. We see dementia or Alzheimer's being connected to gluten sensitivity. Lymphoma, as I mentioned earlier. Depression, dermatomyositis, diabetes type 1. You've heard of type 2 diabetes. Most people have heard of adult-onset type 2 diabetes, but there's a form



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of autoimmune diabetes called type 1 diabetes which is an insulin-dependence, and it's an autoimmune condition of the pancreas. Then down syndrome, dysmenorrhea, which is missed cycles. If you're missing your period and you don't know why, this actually could be a gluten issue.

Dysgeusia, which is the absence of taste. You're losing your ability to taste and smell. Both can go with gluten sensitivity, and one of the reasons why is zinc. Zinc is one of the most common nutritional deficiencies linked to gluten exposure. Zinc is also responsible for your ability to taste and smell. Then, again, beyond those things, we can get edema, eczema, dysphasia, which is trouble swallowing. If you're trying to swallow but you find that it's hard, this actually can be gluten exposure. Epilepsy. A lot of folks out there taking anti-seizure medications for a diagnosis of epilepsy.

Gluten is a major contributing factor and cause of epileptic seizure disorders.

Spontaneous nosebleeds. My son had this. It was one of his symptoms. My oldest son would have spontaneous nosebleeds before we found out he needed to be on a gluten-free diet. Erythema nodosum, chronic fatigue syndrome, fibromyalgia. Here's a study done where they report that a person with fibromyalgia went into full remission on a gluten-free diet. As we mentioned earlier, retardation of growth, mental retardation, secondary food allergy response, meaning you'd start to develop more and more food allergies or acquired food allergies. Blood in your stool, gastric bloating, Graves Disease, which I mentioned earlier. Bleeding gums. There are a lot of things that can cause bleeding gums, and gluten is definitely one of them. Hair loss, heartburn, H. pylori infection, the gluten damage and it can predispose you to H. pylori overgrowth in your stomach. H. pylori increases your risk for developing heartburn, and also increases your risk for stomach cancer. Hives, which we've talked about earlier. NAFL stands for non-alcoholic fatty liver. Malnutrition and nutritional deficiencies, and then infertility. You see these next things, I'll put up a slide for you. Infertility, hypogonadism, hypoglycemia, all of these are linked up to fertility issues in women. Obviously, infertility, but hypogonadism and hypoglycemia, low blood sugar, high blood sugar swings is a hallmark. Women have PCOS, polycystic ovarian syndrome, which is also another condition associated with gluten sensitivity. The way I like to describe PCOS is it's kind of diabetes of the ovaries. It's a blood sugar issue. This is why doctors prescribe the insulin, the drug that impacts insulin sensitivity called Metformin when women have PCOS.

Then we have hyposplenism and thrombocytopenia, which is low levels of platelets. If you've got low platelet counts, gluten might be contributing to that. Osteoporosis, insomnia, irritable bowel syndrome, keratomalacia, lactose intolerance, gluten can damage the intestinal lining which is where some of the enzymes that are produced that help you digest lactose. A lot of people, they're gluten-sensitive, the gluten damages their stomach, then they start to become intolerant to the dairy, and they developed the lactose intolerance. As I mentioned earlier, loss of smell, non-Hodgkin lymphoma, early menopause. Actually, I like to call it pseudo menopause because oftentimes you'll see a woman, she'll claim to have gone through menopause, she'll go gluten-free, and then she'll get her period back. That doesn't happen with everyone, but again, it's something I've seen commonly overtime over the last many



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decades of practice. Again, early menopause. Migraine headaches are very highly related to gluten sensitivity.

Multiple sclerosis, major trigger factor in gluten sensitivity. My friend, Terry Wahls, if you guys know Dr. Terry Wahls, who had multiple sclerosis, and one of the ways that she reversed her disease was a gluten-free diet. That was probably one of the biggest components of her success. In muscle wasting, myopathy which is muscle damage. You see here, gluten sensitivity from gut to brain, I'm going to put this slide up, it says, "Gluten sensitivity is a systemic autoimmune disease with diverse manifestations. This disorder is characterized by abnormal immunological responsiveness to ingest gluten in genetically susceptible individuals." Keyword there is "genetically susceptible." You've heard me mention in the last module when we were talking about the genetics of gluten sensitivity. We'll go into more detail in a future module on the genetics of gluten sensitivity, but you're going to hear that come up repetitively, that gluten sensitivity occurs in genetically susceptible individuals. Meaning there has to be this genetic component for there to be gluten sensitivity reactivity occurring.

Again, celiac disease or gluten-sensitive interrupt is only one aspect of a range of possible manifestations of gluten sensitivity. Keyword "only one" celiac disease is only one aspect of a range of possible manifestations. Although neurological manifestations in patients with established celiac disease have been reported since 1966, it was not until 30 years later in 1996, that in some individuals, gluten sensitivity was shown to manifest solely with neurological dysfunction. Again, going back to those concepts, and why I spent so much time in the beginning teaching you the difference between celiac disease, gluten sensitivity, gluten intolerance, and gluten allergy. The importance of understanding those definitions lies in this, we can't make the assumption that if you don't have celiac disease, that gluten isn't hurting you. Again, as this major paper was published in *The Lancet* by one of the world's leading researchers on this topic, Dr. Marios Hadjivassiliou, and that is neurological dysfunction can be the only way gluten rears its ugly head in your body. Just through nerve damage.

Cerebellar ataxia, as I mentioned earlier, neuropathy, including small fiber neuropathy, so if you've got that diagnosis where some neurologist has said you have small fiber neuropathy, and then they're putting you on gabapentin for the rest of your life, a gluten-free diet might be something you want to entertain.

Going down the list. Obesity, osteomalacia, osteopenia, parathyroid carcinoma, which is a type of cancer, pancreatic insufficiency. You have pancreas damage. Tooth decay, as I mentioned earlier. Polymyositis, which is multiple areas of muscle pain and inflammation. PMS, I mentioned that one. Biliary cirrhosis, psoriasis, dermatitis. Sjogren's syndrome, which is dry eyes, dry mouth syndrome. Then short stature scleroderma steatorrhea, spina bifida. Let's backup. Steatorrhea is fat in your stool, so if you're malabsorbing fat, you'll see it and your stool color will be clay or tan. That might be a hallmark. If you're chronically seeing fat come out in your stool, that might mean you're gluten sensitive or gluten-free diet can help you.



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Spina bifida. Now, spina bifida is a birth defect, but one of the reasons why gluten is associated with it, is because gluten can cause folate deficiency. There's a reason why, in 1998, the government began a food fortification of folic acid. It was to reduce the incidence of neural tube defects. Neural tube defects are basically defects in babies as they're developing. Spina bifida is one of those types of neural tube defects, as is cleft palate. We know gluten causes or can cause folate deficiency, which can lead to the increased incidence of these conditions.

Tremors. Parkinson's disease. Glossitis, which is swelling of the tongue. Vitiligo, which is a loss of pigmentation of various of the skin. Vomiting, vaginitis, urinary tract infections. We'll stop there. That is not the, will say the end of the all list. That list, for the sake of giving you a broad overwhelming sweeping picture of the vast nature of how gluten can impact different people in different ways, I wanted to cover that with you, but if you didn't see your condition on the list, write us, comment below. If it's something that we have research on or that we can help you with, we'll certainly, certainly send that help your way.

Now, these are some additional scientific resources I'm going to put up on the screen. These are a number of just studies that just validate what I've just shared with you. I didn't have time to go into every detail of the medical literature with you on all those conditions, but I think it's important to list references when we're making broad sweeping claims like this because a lot of people are going to look at this video, and they're going to say, "Oh, that's impossible, Dr. Osborne. There's no way that one family of proteins can create and bring so much havoc on people." The fact of the matter is, yes, it can. The proof is in the pudding scientifically and the research, but also in clinics across the world.

We can recognize it that gluten-free diet phenomenon is the largest and the most sustained long-term diet change ever witnessed in the history of mankind. Most diet changes come and go. Most diet trends come and go. Gluten has been around for longer than 30 years. It's not going anywhere because a gluten-free diet is one of the core fundamentals of overcoming autoimmunity, and because autoimmune diseases is massively on the rise, epidemic proportions, we're not seeing the gluten-free diet go away anytime soon.

Many of you just watched all that and you're thinking or asking yourself, "Gosh, how do I know if I'm gluten-sensitive? I really don't want to change my diet, but I have those conditions that you talked about, and I really don't want that condition, so I would rather not have that condition." Or, "I'd rather change my diet and not have that condition and keep that condition and have to change my diet." You're maybe wondering what the best way to get gluten sensitivity identified. Remember, I've said this a number of times, gluten sensitivity is not a disease, it's a state of genetics. I mentioned this, I said, "You're going to see this trend as we go through these modules." You'll see all the researchers and all the science comes back to a common term, which is "People who react to gluten have a genetic susceptibility," there's a genetic pattern. That's, in my opinion, the best way to understand whether going gluten-free is a smart move, is to measure the genetic pattern, not of celiac disease because they're not the same thing.



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If you're doing 23andMe and some of these other common genetic tests online that you can purchase, those tests they're not determining gluten sensitivity risk. What they're determining is celiac risk, and remember, they're not the same thing. They're celiac risk, and then there's what's known as non-celiac gluten sensitivity gene patterns. Again, these labs are not looking at those gene patterns. Question comes up, what's the best way? How can I get this looked at? How can I understand whether or not going gluten free is going to be a smart move for me to make for my health and wellness? My advice is genetic testing. Now, for those of you who have taken the time out of your busy schedules and lives to watch this and get educated, we're putting in a massive bonus for those of you because we want you to be able to access this and not break your bank account. This is the absolute lowest cost that I've ever been able to get the lab to offer on genetic testing for gluten sensitivity, because this is a high advanced lab. This is not like your snip testing, which again, like some of your ancestry, 23andMe and some of those companies, those tests don't offer the same type of genetic analysis that this test does. Again, we've got our lowest possible cost for you, you need to make sure that you use our promo code for this event. It's called-- the promo code is matrix, after the Glutenology Matrix. You'll get, again, the biggest discount that we're able to offer. We'll put a link up here for you to click on. You can go read more about genetic testing, but if you want to find out about gluten sensitivity, and you want to do it at the cheapest possible cost, do it now because this discount code, the lab is not going to let us use this forever, so do it now.

The other thing that you can do is you can take our gluten free quiz, maybe it's not in your budget right now, we do have a quiz, it's free for you. We'll put a link under this video to take the quiz to help you to determine whether you need to suspect gluten as a potential culprit and get gluten out of your diet.

Now, stay with me because next we're going to have module three for you. We're going to be talking about the difference between celiac disease and gluten sensitivity, very, very important. We're going to talk about why medical tests often fail to identify gluten sensitivity. We're going to dive deep into the testing component. We're also going to be talking about how to properly test for gluten sensitivity. Now, you've heard me talk about genetics, but we're going to dive into why genetics is what you want to look into if we're talking about gluten. Why is gluten sensitivity on the rise? This is the number one question that we get asked. When my grandparents were younger, they ate gluten every day. Why do we see so much gluten sensitivity happening now? We're going to dive into the depth of that question coming up in module three.

Stay with me for the Glutenology Health Matrix. We'll see you in the next episode.

**[01:02:57] [END OF AUDIO]**