Gluten-Free as an Antidote to Low Vitality

Transcript

Hello and welcome to the Institute of Nutritional Endocrinology presentation, *Gluten-Free As an Antidote to Low Vitality*. I am Dr. Ritamarie Loscalzo and I am excited to share this information with you because I think it is really critical information in the care of your clients and really important for you to understand the underlying mechanisms and what goes on in a gluten intolerance that can trigger health problems that are widespread in your clients.

Before we begin, as usual I want to make sure that you understand that this information is not intended to replace a one-on-one relationship with a qualified healthcare professional and it is certainly not medical advice. When you are working with your clients you need to be able to explain to them that you are educating them and you are helping them to assess underlying nutritional imbalances that could create health challenges and encourage them to make healthcare decisions in concert with a qualified healthcare professional especially if they are on any medication or if they are under care for any particular diagnosed conditions.

I decided to put the gluten intolerance module in this section with the micronutrients and in particular under the carbohydrates. I will explain why. So far we have looked at water, we have looked at fat, we have looked at protein, and we have looked at carbohydrates. Gluten is actually a protein. Why would I have put this under the carbohydrates section? The reason is that the foods that contain high levels of gluten or any gluten at all are actually your high carbohydrate foods, your starches, your grains. That is why I decided to put it under the carbohydrates section because as you are guiding your clients to the proper choice of carbohydrates, how many, and which wants to include in their diet, you have to look at the role of gluten in order to make that work.

What are we going to learn here in this module? We will talk about what gluten is, where it is found, some of the hidden sources of it, what gluten intolerance is, and how it can silently destroy health. We will also look at the difference between gluten sensitivity, gluten intolerance, gluten allergy, and celiac. So the difference between celiac disease and non-celiac gluten intolerance, what are some of the symptoms of gluten intolerance, how do you test to determine if your client is gluten intolerant.

There are a number of different tests. Then what do you do to manage clients who are gluten intolerant. Yes avoiding gluten is a big part of it but there are other things that you need to be aware of in order to have your clients get the best results from going gluten-free.

Let's get into the truth about gluten and how it can silently destroy your health. Gluten intolerance has been around for a really long time. Celiac disease was diagnosed a long time ago in the early 1900s. The first signs of non-got related symptoms that were attributed to gluten were actually in the 1930s and that was in relationship to brain issues; issues with memory, cognition, and things like that.

So gluten intolerance has been around for a long time and it has just become popular over the last five years or so, where the supermarkets dedicate part of their shelf space to gluten-free foods. It has become almost a chic thing to be gluten-free. Then there is the naysayers who say ‘there is no such thing, celiac disease is gluten intolerance and it only affects a very small percentage of the population’, but indeed we know that it is much more than celiac disease. It is more than just gut issues and it is not a fad. It is real. The mechanisms are real. There are a lot of well-respected scientists who are staking their careers on studying this and explaining the underlying mechanisms in scientific ways. While this is a short presentation today I am going to give you access to resources I think that you owe it to yourself to look into if you want to go deeper and deeper and deeper.

What exactly is gluten anyway? It is actually a protein. Actually it is a group of proteins that is found in common grains like wheat, barley, rye, triticale, spelt, and kamut. Contrary to popular belief, spelt and kamut which are ancient grains, they are ancient forms of wheat, they are not gluten-free. A lot of people think that they can just switch from wheat to spelt or kamut and have the benefits of going gluten-free and indeed that is not the case for most people.

It is a protein and gluten is, actually there are fractions, subfractions of the gluten protein, gleadin, and a number of others and will talk a little bit more about what those fractions are when we talk about the lab testing. It is basically found in pretty much all of the foods and most of the foods that Americans eat. Most Americans eat about 75% of their calories from gluten between the bread and the cereal and the muffins and croissants for breakfast, sandwiches, the wraps, the pizzas for lunch, and of course don't forget the pasta dishes. Then again the pasta dishes for dinner, the bread before each meal, and the desert after the meal. Add it all up and the majority of what people are eating is gluten. No wonder we are all exhausted and there are so many health problems that abound.

The gluten grains. Where are they found? When you talk to your clients and you just say avoid wheat, avoid barley, avoid gluten, they don't really know where these things are going to be found. This is a very partial, very short list of where gluten grains can be found. In addition there is a booklet that you have access to and you can give access to your clients via opting in on my website to get their free booklet. It has a very detailed list of all of the hidden places that gluten can be found. But wheat, which is pretty obvious, it is all over the place. Breads and tortillas, obvious, right?

The other place that people think, it's funny, that people think ezekiel bread and a essene bread which are sprouted grain breads are actually okay if you have a gluten problem. Indeed they actually might be worse because in addition to the presence of the gluten, there are other compounds and partial intermediate compounds that get produced during the sprouting process that can actually make ezekiel and essene breads worse. When clients say to you, ‘oh, I don't eat any bread, I am gluten-free’, you cannot take that at face value. You need to start digging and asking them questions and get very, very specific. In fact having a checklist that you can give them that they can check off all of the things that they do eat will give you an idea. You would be surprised at how many people I talk to say, ‘I have been gluten-free for two years.’ Then I start asking them questions and it turns out that they are actually eating gluten once or twice a week but it is just little bits here and there and it makes a huge difference.

Under the wheat, like I said, breads and tortillas, ezekiel and it essene breads, any baked goods unless they specifically say gluten-free, have gluten in them. They are made with wheat, they are made with rye, they are made with other grains.

Couscous. People say what is couscous? You go to a Middle Eastern restaurant and you get couscous or you get tabbouleh. Tabbouleh is another one where there is a hidden source of wheat. People don't even relate that to wheat. They are thinking breads and pastas when in reality it is hidden all over.

Soups. A lot of places use wheat flour to thicken their soups and unless they specifically tell you it is gluten-free, do not assume that the vegetable soup that you get at your favorite restaurant is actually gluten-free. Most likely it is not. It is pretty easy when you are reading cans and you read the ingredients but when you are in a restaurant and you just assume that the vegetable soup is safe and is gluten-free, you may get yourself in trouble. This is stuff to warn your clients about.

Pasta, obviously, most of these cereals, Rice Krispies might be gluten-free, I am not sure, you need to read them. Because a lot of things that you think, like cornbread for example, cornbread has a high percentage of wheat flour in it. Sauces and gravies. Again, it is used as thickeners. I used to watch my mom make fresh gravy and sauces on the stove for Thanksgiving or special holidays and she would always put the flour in there to thicken it up. Surprisingly, salad dressings often contain wheat. Oftentimes they contain tamari or soy sauce, which contains wheat. There are so many places where these things are found.

Barley. Barley malt is a common sweetener. It is considered a lower glycemic sweetener and a better sweetener. It is used a lot in macrobiotic cooking. It has the malts of the barley, which has gluten in it. Barley is also used in food coloring. Soup, it is very common to get vegetable barley soup. People don't think about barley being a gluten grain. Malt vinegar, made from barley. Beer, made from barley. I remember talking to people when they first discover they are gluten-free. They say that is no big deal, I don't eat much pasta, I don't eat much bread. Then I say, what about beer, do you drink beer? Then it's freak out time. 'Oh my God, I have to give up my beer too?' There are gluten-free beers that exist these days. I am not sure how good that is or if it is something worth recommending to people but certainly if they have a gluten intolerance and they are insisting on drinking beer, you just have them do the gluten-free beer.

Spelt and kamut which are agent grains, they are non-hybridized versions of wheat. Sometimes people wonder, why is gluten so bad? Why are people so sensitive to gluten? A lot of the reason is that the wheat has been hybridized in bread to contain more and more gluten to give it that nice mouth feel, that's nice doughy consistency. The ancient grains have a lot less gluten and it is in a different format but the point is because we have become sensitized to the wheat, the common stuff, even the other stuff is problematic. So things like kamut and spelt breads, pasta, cereals, and sprouted raw breads that are wheat-free, are not gluten-free when they contain spelt and kamut. The same thing with rye. Rye is common as bread. People don't think about rye being gluten, but also pumpernickel bread contains gluten as well as rye beer and a variety of cereals. So this, like I said, is not an exhaustive list but this is certainly a place to start when you are looking to guide your clients to get off the gluten.

Now we know what gluten is. We know where gluten is found. It is probably just a review for you but it serves to be repeated. But what exactly is gluten intolerance? Gluten intolerance is the inability to digest properly gluten and the reaction that the body has to it. There are several ways that the body can react to gluten. One is actually an allergy, which causes an immune system response and we will go into detail about that now.

Another is to be sensitive to it and it may not involve the immune system, but just that it is inflammatory. Gluten is actually inflammatory for most people. There are a lot of things. Some of the scientists that are studying this say nobody can digest gluten because it has been so hybridized and it is such a hard molecule to digest.

In order to understand the mechanism of gluten intolerance I think it is important for you to understand a little bit about how the immune system works. Your immune system is the surveillance system of the body. It is constantly out there putting a pulse on what is coming into the body and what it has to do to protect. Foreign invaders are actually a.k.a. foreign proteins, a.k.a. antigens. The foreign invaders are identified by the police department and the army of the body, a.k.a. the immune system. So whenever a foreign protein gets into the bloodstream it causes the immune system to go on alert.

What could those foreign proteins be? They could be the obvious, bacteria, viruses, fungi, and yeasts, which are things that we want the body to keep out, right? We don't want foreign micro-organisms to invade the body. Great thing for the immune system to attack these.

It can also attack molds so if there are a lot of molds in the environment like people are living in a moldy, musty environment in the home or your car has gotten wet and the upholstery has not appropriately dried out you may have mold growing there. You may have mold growing in your refrigerator. There are a lot of ways to be in a moldy environment. Molds grow in carpets and in the underlying pads that go underneath carpets. A lot of folks get very bad reactions from work situations where there are a lot of molds and they cannot really survive well at work. That is one of the things that the immune system will attack.

Also pollen is really not a foreign invader but when it gets into the system and the system is a little confused, it can treat it as if it is a bacteria.

Food particles are not supposed to get into the bloodstream. That is the wrap. Food particles are supposed to stay in the digestive tract. They are supposed to be digested, broken down, absorbed through the lining of the digestive tract as tiny, tiny particles, the little building blocks that we talked about, the building blocks of the foods--the monosaccharides of the starches, the amino acids from the proteins and the fatty acids from the bigger fat molecules. Those go into the bloodstream. But when there is an issue with the barrier of the gut, the barrier between the outside world and the inside world: because the inside of your digestive tract is actually still the outside world.

When the particles that are not fully digested are able to penetrate through that lining we get a reaction of the immune system and that is one of the things, one of the proteins that the immune system can react to. In addition, there is dirt, there are parasites, and there are environmental toxins. All these things can get into the system and create an immune system attack.

When gluten gets into the bloodstream, when the gluten molecules do not get fully broken down into their constituent amino acids and it is recognizable in the bloodstream as a foreign protein, the body attacks. In addition, if we have a buildup of specific types of antibodies called IgA antibodies that live in the lining of the digestive tract, that live in that barrier, and as soon as anything starts to go through it, it immediately puts a reaction in; so it doesn't even have to get into the bloodstream and the reaction can actually start in the intestines.

Let's look at antibodies because antibodies are the constituents of the immune system. They are also known as immunoglobulins and they are proteins. They are a specific class of protein and there are various types of antibodies. Most people don't think of the types of antibodies. They just think of antibodies. Antibodies are antibodies are antibodies. There are actually different types. IgMs and IgD's, that is immunoglobulin M and immunoglobulin D, are the first line of defense. They are what comes into play early on in an infectious process. IgG's are the most prevalent in the blood. They are usually more of a delayed sensitivity. They react a little bit later than the IgA's and the IgE's.

The IgA's are in the mucosal surfaces: in your secretions, your respiratory tracts, along your digestive tract, in your vagina, anyplace where there is moist, mucosal type surfaces, the IgA is a lining there to protect. The IgEs line the respiratory and the G.I. mucosal reactions and they have immediate sensitivity and they produce or trigger the response to produce histamine. Histamine is actually a chemical reaction. Think of it as the ammunition of the immune system that causes the reactions that you see in acute allergic reactions like hives and swelling of the skin and things like that.

Food allergies can either be immediate or delayed. Generally the immunoglobulins that would be involved would be IgA in the mucous membranes so IgA say in the gut lining, the respiratory tract, the lungs and in the nose. The IgE, which do the immediate attack and produce histamine immediately. Those are people who eat a strawberry and get hives. There is almost no time that goes by in between.

Whereas, with the IgA's and the IgG's, there is more of the delay. The IgG's are delayed hypersensitivity and sometimes you don't even see it reaction related to an IgG for a day or two or up to four days after the exposure. That is measured in the bloodstream. The mistake that is made a lot of times is that we test for allergies by just testing IgG's and in reality you may not have an IgG response to something but you may have an IgA or in IgE.

Then there are IgMs which you don't hear about very much and they are not actually measured all that much although there are some tests that you measure for them. Those happen early in an allergic response. Now would be a good time to distinguish between a food sensitivity and a food allergy. A food allergy is a situation where this immune response that I just described is happening. There are immunoglobulins that are out there attacking the food in question.

A food sensitivity is where your body just does not handle a food too well. It could be an allergy but it could also be something like maybe you don't make the right digestive enzymes to break it down or maybe there is a particular fiber in that food that is aggravating or irritating or inflammatory to you. Frequently, both food allergies and food sensitivities are caused by a leaky gut. You already know what a leaky gut is, right? It is the membrane that lines the intestinal tract that is supposed to keep the outside world from the inside world, it gets damaged, it gets inflamed.

And the villi and the microvilli that line the gut get damaged and inflamed and sometimes flattened and when that happens it causes an increase permeability of the intestinal lining. A lot of times gluten sensitivity causes a dampening, a deadening a shrinking of those intestinal microvilli and creates inflammation. Then you have subsequently developed additional food allergies and sensitivities as a result of the damage caused by the gut’s reaction to the first one. It is quite complex.

This is what the cell membrane looks like of a mast cell. A mast cell is a histamine-producing cell. It gets involved in allergic type reactions. We had the whole arachidonic acid cascade which we talked in depth about in our fatty acid module, where we talked a lot about fats and how the fats produced either inflammation or anti-inflammatory. So that is in the mast cell membrane.

This is a review of the inflammatory cascade. We have our essential fats on top, linoleic on the left-hand side which is an omega-6 and alpha linolenic on the right-hand side which is an omega-3.

We have the Delta-6-desaturase enzyme, which elongates those fatty acids into EPA/DHA on the omega-3 side or GLA on the omega-6 side. Then it comes down and either results in inflammation or anti-inflammation. The omega-3's are always anti-inflammatory. The omega-6s can go either way.

When there is an excess of linoleic acid in the diet it pushes the reaction down from GLA to the DGLA into arachidonic acid, which is inflammatory. Or if we have the right balance it can produce PGE1, which is an anti-inflammatory prostaglandin. This is just a review. For more details review the *Fat* module.

Again, a review of what can help and these are the same things that help in inflammation that can also help in a gluten response. The more you have a built up fatty acid cascade the better your response is going to be to any kind of immune assault or attack. So we've got our flaxseeds, chia seeds, hemp seeds, walnuts, fish, marine algae, on the right-hand side for omega-3. On the left-hand side we have very abundant foods which would be sesame seeds, sunflower seeds, almond, pumpkin. The less common which would be more supplemental type oils which provide GLA like borage and black currant and evening primrose. It has to do with the balance of these things plus the nutrients that support the Delta-6-desaturase enzyme--your B vitamins, vitamin C, vitamin E, zinc, magnesium--all of these are important for dampening the inflammation that occurs as a result of food intolerance and in particular, gluten intolerance.

Let's look at the widespread symptoms that gluten intolerance can cause. Pretty much it is a great mimicker. It can create damage throughout the entire body. Let's look. First of all it can cause weight gain or weight loss. How can that be? How can it cause both? Well it can cause weight loss if it triggers diarrhea and the diarrhea causes you to lose the stool and lose all of the contents of the food as it is being eaten. When gluten intolerance is damaging the gut and it results in chronic diarrhea it can lead to weight loss. For the most part it usually leads to weight gain because of the inflammation.

Nutritional deficiencies. These result from malabsorption. Gluten intolerance leads to inflammation in the gut and subsequent malabsorption; so you can get low iron levels, low B12 levels, low vitamin C, B vitamins, any and all nutritional deficiencies can result from gluten intolerance. Of course there is the typical gastrointestinal problems, bloating, pain, gas, constipation, and diarrhea. All of the above can be caused by gluten intolerance and fat in the stools caused by poor digestion. These are specific to the gut and I am going to tell you that a lot of times the gut symptoms of gluten intolerance are the later ones.

A lot of people mistakenly will say to you ‘hey, I don't have gluten intolerance, I eat gluten, I don't get a belly ache, I don't get bloated.’
You've got to dig deeper and look at what some of the other issues are and the other problems that they are having because gluten can go way beyond the gut, and in some people the gut stuff is last. A lot of times it starts with the brain and more systemic things like achy joints, things that mimic rheumatoid arthritis or actually can cause rheumatoid arthritis and other kinds of joint issues.

Depression. A lot of times I have got people off gluten and within days to weeks they reduced their depression medications, which is pretty phenomenal.

Eczema or chicken skin. You know on the back of the arms were the skin looks really bumpy, or eczema? People just don't associate that with gluten. There is a particular type of dermatitis which is inflammation of the skin which is called dermatitis herpetiformis, which is very classic for gluten. When you have somebody with skin problems you've got to think gluten intolerance.

For some people it is headaches and it may not be shortly after consuming. It could be up to three or four days later. It can cause exhaustion and it can cause brain fog. The thing about these symptoms is once you have a gluten exposure, if you are supersensitive, the symptoms can linger for months. People may think ‘oh yeah, I am somewhat gluten intolerant but every now and then, every week or two, I have a little bit of gluten’. What is happening is every time your client goes off the gluten, the symptoms will subside and the healing of the gut starts to happen but every time they reintroduce it, everything gets flared up again and it can actually take up to six months for all of the symptoms to fully go down. To me it is just not worth it and really when you are counseling people it is important for you to really explain this to them that occasional gluten exposure is not okay.

Let's talk about other symptoms of gluten intolerance. Here are some that most people have no idea it is related. Infertility, irregular menstrual cycles, and even miscarriage. The literature abounds with studies that link these to gluten intolerance. Does everybody with gluten intolerance have these symptoms? No. Does everybody with these symptoms have gluten intolerance? Not necessarily, but it is up to you to educate and inform your clients that this is a possibility so that you can do whatever it takes to rule it out and get them on the road to recovery.

It can result in neurologic symptoms. Among those are cramping, tingling, and numbness. Cramping in the muscles, tingling, and numbness. It causes slow infant and child growth. That is a pretty obvious one. If someone is not digesting and absorbing properly the kid is not going to grow and that is a failure to thrive, it is a symptom that is very common and you would be surprised at how many conventional doctors miss it.

I remember working with a mom who had a son who was showing signs of Asperger's disease, which is on the autistic spectrum. The doctor said ‘hey, you know, he is slow to develop’ and blah blah blah. The kid was underweight for his size and he had diarrhea. Did that doctor even consider that it was gluten intolerance? No, the mom had to start doing research, she came to see me, we investigated it, and sure enough the kid had gluten intolerance. Within a year of a gluten-free diet and taking extra supplements to rebuild his gut this kid went back to the doctor who said, ‘well, this child is a little bit above normal in intelligence.’

It is amazing how often it is overlooked and you are going to be inclined to go and try to find the root of the problem closer to where the problem is. In other words I have had people say to me somebody came into me with a particular inflammatory condition.

Right away you are trying to solve that problem but really you have to remember underneath the roots, the roots, the roots and gluten intolerance needs to be investigated in anybody with any chronic health challenges regardless of where it is because it is the great mimicker, like I said. If you are working with somebody with thyroid problems, if you are working with someone with inflammatory problems, if you are working with someone with hormonal imbalances, you've got to think gluten and get the gluten out to be able to test it.

Other symptoms. Irritability and behavioral changes. Early onset of Parkinson's. How many people will think ‘oh, I have Parkinson's, it is really depressing’, are actually gluten intolerant? This is damage that has been happening for years. Even Alzheimer's, and of course autism and ADHD. I did a research paper which I am going to give you a copy of in the extra documents section of the page. It was all about the autistic spectrum, neurodevelopmental diseases and conditions in children and their relationship to gluten. It is a very enlightening paper with about 65 different resources and references.

Finally let's look at the last slide of symptoms of gluten intolerance: thyroid problems. If someone presents to you, and say they are on Synthroid or any other thyroid medication, you have got to immediately think gluten intolerance. You have also got to immediately check their

anti-bodies, especially in conditions where there are thyroid antibodies, it is a must to get them off of gluten. Same thing with insulin resistance.

Insulin resistance is triggered by and made worse by continuing to use gluten in addition to the fact that gluten is a grain and it causes a high glycemic effect, it is the inflammatory effect and the effect it has on the pancreas and on the GAD receptors in the pancreas and the GAD enzymes. It can actually create and trigger insulin antibodies. You really have to look at gluten intolerance when you are looking at insulin resistance. Diabetes, insulin resistance, diabetes again on a continuum, any autoimmune disease you've got to look at the underlying root of gluten intolerance and get people off gluten to test if that is the cause.

Crohn's disease. For sure Crohn's is an inflammatory gut response, and it is amazing how many people respond when they get off gluten, and dairy, and when they get off all of the processed foods and they get onto good fats and they go on a healing regime. Finally any kind of hormone imbalances whether it is thyroid, adrenal, reproductive hormone imbalances, PMS, menopausal symptoms, all of these things can be related to gluten intolerance and, like I said, it is a great mimicker. You've got to work with this gluten free diet to help these folks.

Let's look at how you test for gluten intolerance. In some cases people don't want to spend the money to get tested. They just say, okay, it's probably true and I will just go off the gluten and that is a great way to do it. I personally have never been tested for gluten intolerance. I know I am intolerant and I don't want to waste my money. I know I am going to stay away from it at all costs. For some people it may not be so straightforward. They may be good at the diet at first but then they will say just a little bit. If they have not tested to confirm whether or not they have the gluten intolerance or tested to see if they have the gene, they may start to cheat and over time their symptoms are going to recur.

Let's take a look at some of the tests we can do. First of all an elimination diet. You can eliminate the suspects like a gluten in this case and I would also be eliminating any foods that are known to be cross-reactive with gluten: dairy is one of them. There is a whole list of them, hempseed, sesame seeds, quinoa, rice, it doesn't mean that the person is going to be cross-reactive but if you are going to be doing an elimination diet I would certainly eliminate those.

Fasting is one way to eliminate the suspects. Fasting completely on water. Not very many people are going to want to do that. I listed as a medical food because it would be a meal replacement type food.

There are some of them that come from various supplement companies like Thorne and Metagenics that have things like UltraClear and MediClear and all of that, that are formulated specifically to be full of the nutrients that someone would need that they could live on four or five servings per day, but you can also make up your own. You can use any kind of really high quality protein powder along with greens, powders, and any additional nutrients that you feel people need. I usually find that a combination of protein powder with a green powder can work very well.

The other thing you can do is juicing. Juicing can be fine too, just vegetable juice so you are off all of the grains, dairy and all of these suspicious types of food. The last thing would be a rare foods diet where you have somebody go on a diet of just foods that they eat hardly ever and then after the days you are going to introduce foods. This is an elimination diet. You can use it for gluten intolerance. You can also use it for general food allergy testing. The provocation protocol is one new food at a time and then there is the three-day rule. What does that mean? You add a food and then you watch and observe for three days. You eat a lot of that food for over three days.

If you don't see a change or your client does not see a change in how they feel over the three days, they are free to add that food back in, and assume that is not a problem, and they go on to the next food. If, in the course of those three days there are any suspicious symptoms, a return of symptoms that had gone away during the elimination phase, then you know that there is a problem. When you are doing this I highly recommend that you do not test gluten after the three days. You do not test dairy after that time. You test the other foods that you think are possibly suspicious. You are assuming that over the course of this elimination diet that a person feels better. If they do not then it could be that there has been a lot of damage from the food intolerance, particular from the gluten intolerance, and you may have to start working on healing there gut before you can have a successful provocation period.

There is a program called the *Food Allergy Spy Training (FAST)* that I offer. It has materials and has all of the guidelines for doing an elimination diet. When we get into testing, actually testing other than doing elimination diet, you can look at blood anti-body food tests. Personally I have not found these to be especially reliable, especially for gluten. I find that people tend to, especially if they have been away from the food for a while, these tests generally won't show up. They are going to actually show active, anti-body reactions.

Basically you take a vial of blood, usually they measure either just IgG which is a delayed sensitivity, or IgG and IgE. Quite frankly IgE, a person is going to know about and usually gluten is not related to IgE's, they are usually related to IgA's and IgG's. Basically you are going to test the blood to see if there is an antibody reaction to the particular food, in this case gluten or the other cross-reactives to gluten. Some labs offer IgA's and IgM's. There is one lab that offers a whole panel, IgA, IgM, IgG and IgE and it costs about $1400 to get about 120 foods done. If you want to just do gluten this is not what I would recommend. I would not recommend doing just pure IgG. We will talk about a lab that does do gluten testing and it is much more reliable gluten blood testing.

A lot of times if you do a food antibody test and the person shows up with a lot of positives, it is usually related to having a leaky gut. The reason that it is related to a leaky gut is that all of these undigested food molecules are being absorbed through the damaged membrane. If you were to take the person off all of the foods that showed up in the test and then they started eating other foods on a regular basis repeatedly that next time you did the test those new foods that they started eating a lot more of are going to show up. It is just a really challenging way to do it.

Another blood test that is pretty popular is called the ALCAT food intolerance test. They don't actually measure antibody reactions. They measure the cellular response, how do your cells respond? They test about 350 foods, chemicals, and herbs. They do test for gluten and they do test for dairy. What I found is that when I do these tests for people, inevitably we put them on an elimination diet and we go back and retest and some of the foods that they were mildly allergic to they got more allergic to and vice versa. I really don't have a lot of confidence in doing food allergy testing this way. I think elimination diets are the best and a couple of the other tests through Cyrex labs are also pretty good, and the stool tests. We will talk about those in a moment.

My favorite test for gluten intolerance by far is also the least expensive, is the *EnteroLab Stool Antibody Gluten Test*. If you just measure anti-gliadin antibodies in the stool then it is about $99 to do the test. Gliadin is only one of the subfractions of gluten that could be tested for so if you get a negative it might be a false negative and then you might want to invest in a little bit more expensive test that tests all the fractions from Cyrex labs. They also test some of the possible things that could cross-react like eggs and dairy and peanuts, there are about 4 or 5 of them that they do. They have the more extensive panel of IgA stool antigens, which I think are a little bit more reliable than the blood IgG's in my experience.

They can measure inflammatory markers and they can also measure to see if a person has the genetic markers for gluten intolerance, the HLA-DQ's.

The *Gluten Subfractions Reactivity*. This is an array from *Cyrex Labs*. It is called *Array 3*. It is a blood test. They assess gluten reactivity in 12 different fractions, not just gliadin. Gluten is composed of many sub proteins and most of the tests just test for gliadin which is one that the majority of people are sensitive to, but not necessarily all, so if you just test an IgG for gliadin, a lot of people are going to have a false negative.

The problem with doing these tests is you have to have had recent exposure to gluten in order for them to be positive. So if somebody has been off of gluten for a while, it really, to me, feels almost cruel to make them go back on gluten just so you can run a test and then run the risk of them having massive symptoms again. The Cyrex *Array 3* will test not just IgG's but will also test IgA's so that makes it more sensitive than just the test that to IgA's plus it measures all of the different sub-fractions. Cyrex labs also has a test called *Array 4,* which is for cross reactivity. It is basically testing for reactivity of a number of foods that have been found to cross-react with gluten.

The list is here on the screen, rye, barley, spelt, Polish wheat (that's not even a cross-reactivity they actually contain gluten) cow's milk, casein: both alpha and beta casein, casomorphin, milk butyrophilin, whey protein, testing all of the individual components of the dairy. Chocolate (which I think is a very silly thing for them to be testing because it is just really testing milk), oats, yeast, coffee, sesame, buckwheat, sorghum, millet, hemp, amaranth, quinoa, tapioca, teff, soy, egg, corn, rice, and potato. You can take this list and if you are designing an elimination diet for somebody for someone you suspect cross-reactivity and they don't want to spend the $200 to get the test done, you can do an elimination diet and have them eliminate all of these foods and then gradually add them back one at a time.

The purpose of doing a gluten cross-reactivity test is that a lot of people, up to 30% it is estimated, don't get results when they just go off gluten even though they are gluten sensitive. Why? Because they are continuing to have an immune response to the foods that cross-react. It measures foods that are known to cross-react with gluten so it is a good thing to do and a large percentage of people who are sensitive to gluten are also sensitive to casein, which is milk protein and some of the other milk proteins. I have heard the estimates go anywhere from 50% up to 80% of people who are sensitive to gluten are also sensitive to some portion of the dairy.

What is the story for managing gluten intolerance? Is it as simple as taking people off gluten? Obviously from what you heard, it is not. It is a little bit more complicated than that because number one, there could be cross-reactive foods, so just taking them off gluten may not get the full results. Number two, from years of gluten intolerance the person might have a leaky gut, inflammation in the gut, and that needs to be addressed as well as the gluten avoidance. Number one is strict avoidance: strict, strict, strict.

I am going to give you access to a resource that has a very detailed list of all the hidden sources, not only in food but in cosmetics because remember some of the molecules that are in the cosmetics are going to penetrate into the skin, through the skin, and get into the bloodstream. You have to be careful about what people are using on their skin, what soaps they are using, what shampoos they are using, makeup they are using, etc. A lot of these makeups and shampoos and conditioners do contain gluten. It is really important to manage their life, to completely avoid the gluten.

What about just having them go off of gluten and go on all of these gluten-free products? So getting gluten-free muffins and gluten-free cereals and gluten-free bread and gluten-free pasta and you name it, gluten-free, gluten-free, gluten-free. I think when you do, you run the risk of not getting the full benefit of going gluten-free, because a lot of those products, number one have cross-reactive ingredients like eggs and rice and dairy products; and number two, they are very refined and most of them have some sort of either refined flour or sugar or both. You are actually creating a problem and not solving a problem; or not solving a problem of insulin resistance and sugar intolerance as well.

It is really important to get people off the gluten but to make sure they are doing things to heal their gut. We will have a very detailed presentation and protocol for healing leaky gut and restoring integrity, making sure that they are on enzymes and probiotics and foods that are anti-inflammatory for the gut and to heal it and use mucilaginous foods and herbs, etc. There is a lot of work that we can do for healing the gut. It is avoiding gluten in every aspect of life: food, environment, sprays in the air, clothing, etc. Then it is healing the leaky gut. Then avoiding the cross-reactive foods. Then increasing the level of nutrition in the body to support all of these pathways and all of the healing; so a lot more of your green leafy vegetables and your omega-3 fats and a lot of foods that are just really intended to bring up the level of integrity in the body. I have a resource that you will have a link to.

It is a little booklet that I put together called *Eliminate The Gluten And Accelerate Your Health*. It is a transcript from a talk that I did.

It's got resources, recipes, and hidden source of gluten and dairy lists. I encourage you to utilize that to encourage our clients to get that or create something like that of your own for your clients but it is important that you think gluten whenever somebody appears in your doorstep with chronic problems that don't seem to be going away.

Thank you so much.