

# The Evils of Gluten

*An interview with Dr. Peter Osborne*

“ALL DRUG THERAPIES ARE BASED ON PLANTS, HERBS, THINGS THAT WE FIND IN NATURE, SO WOULDN’T it also be right to say that if we look at food as if it were a drug then we can identify potentially abnormal drug reactions or abnormal food reactions in individuals who ate different types of foods? One man’s food is another man’s poison...”



Dr. Peter Osborne.

**DOT CONNECTOR MAGAZINE (DCM):** Can you tell us why you focus on gluten, dairy and food sensitivities?

**DR. OSBORNE:** When I first started practicing, my view was very limited regarding proper nutrition. I had a naïve view point of how nutrition could change somebody’s health. It is not that I didn’t think that nutrition was important, it’s just that I thought that if you could correct a vitamin deficiency or a mineral deficiency, then a person will ultimately get better because you would be giving their body what they needed to sustain normal function. But as I practiced that way for several years I found very limited benefits. There were cases where a person had gross deficiency of a vitamin and mineral, and we got really miraculous results, but as a general rule, most of the people with chronic degenerative disease responded somewhat mediocre. It got me into thinking more along the lines of what else that we could do to contribute to realigning their health,

and food is one of the ultimate solutions there. We all know about exercise and we can guide on exercise. But food is the big issue, and so often in today’s world everybody is given the same recommendations – a very broad spectrum. Eat a food guide pyramid-based type of diet with variety of foods and you’ll stay healthy.

And so, the more you plunge into that, and the more you are investing into that, you realize that not everybody looks the same, not everybody acts the same, not everybody’s internal biochemistry is the same, therefore not everybody is going to necessarily need to eat the same food or react the same to the same foods.

All drug therapies are based on plants, herbs, things that we find in nature, so wouldn’t it also be right to say that if we look at food as if it were a drug then we can identify potentially abnormal drug reactions or abnormal food reactions in individuals who ate different types of foods – one man’s food is another man’s poison.

**DR. OSBORNE’S WEBSITES:**  
[TownCenterWellness.com](http://TownCenterWellness.com)  
[nutra-md.com](http://nutra-md.com)  
[glutenfreesociety.org](http://glutenfreesociety.org)

**DCM:** Could you list just a few of the main chronic degenerative diseases that come to your attention that are the most common?

**DR. OSBORNE:** Chronic degenerative diseases like diabetes, osteoporosis, heart disease – and that can be high blood pressure, high cholesterol, or a number of other hypertensive cardiovascular conditions.

And then you have the whole spectrum of autoimmune diseases which tend to show in the fourth decade of life and those are diseases like rheumatoid arthritis, lupus, scleroderma, dermatomyositis, hypothyroidism, Grave's disease and about 140 other different autoimmune diseases.

**DCM:** What is the difference between celiac disease, which we assume is an autoimmune disease, and gluten sensitivity?

**DR. OSBORNE:** Gluten sensitivity in and of itself is not a disease, it is a state of genetics. And if a person has the genetics that don't allow them to tolerate the consumption of gluten, then they eventually end up sick. One of the ways that people get sick from gluten is through the development of celiac disease and this is why we say gluten sensitivity is not a disease any more than a peanut allergy or any other type of food allergy is a disease. But if a person has an allergic reaction or has an intolerance reaction – and there are differences there – then they will get sick from eating that particular type of food.

And so again, gluten sensitivity is not a disease, but it causes disease. One of the diseases it causes is celiac disease. We have actually linked over 300 conditions to gluten sensitivity. And so to just say that gluten sensitivity and celiac disease are synonymous is actually cutting it way short.

**DCM:** When you say it is genetic, would that be something like, say, one parent has the gene for celiac and another parent hasn't, and then it comes together in the child and the child is celiac, or maybe both parents would also be gluten sensitive because they carry one copy of the gene. Is it that easy?

**DR. OSBORNE:** Yes and no. There is a lot that we don't know certainly about the genetics and then there is a lot that we do. What we tend to look at with gluten sensitivity – we will look at a set of genes. There are two of them. They are called HLA-DQ genes. There is an alpha 1 gene and there is a beta 1 gene. Most of the research today has focused on specific genotypical patterns called HLA-DQ 2 pattern or an HLA-DQ 8 pattern, and these are the gene patterns that are associated with celiac disease. But other researchers have actually identified a couple of other patterns, HLA-DQ 1 pattern or HLA-DQ 3 pattern, as associated also with gluten sensitivity. *But when people have these particular gene patterns they don't tend to manifest as celiac disease or gastrointestinal symptoms, their symptoms tend to manifest in the nervous system – they develop neuropathy and other neurological conditions.*

Back to your question, which is if mom and dad both passed the genes, does that mean baby has the problem? Yes and no. The way the gene works is that it codes for a receptor that sits on top of the lymphocyte, and this receptor's job (or this antenna's job) is to identify foods that don't belong in the body or other foreign substances that don't belong in the body. So, genetically speaking, these genes code for that receptor and if you have certain patterns in your genes then we know that your receptor is going to be predisposed to overreacting when it comes in contact with gluten. Again that reaction can manifest in different ways, some people develop celiac disease, some people develop other conditions associated with chronic long-term inflammation.

**DCM:** The reason we're asking is because one of us is a sufferer of rheumatoid arthritis and her children have various other manifestations of gluten sensitivity, but one in particular is celiac. Why the rest of them are so sensitive and have other manifestations and why this one child got the full manifestation of celiac disease.

**DR. OSBORNE:** Let me just try to clear that a little bit; because a lot of people think that celiac disease is like the worst case scenario when it comes to being gluten-sensitive, and it is not any worse or any milder than, say, somebody who has rheumatoid arthritis or somebody who develops lupus or Hashimoto's thyroid disease. It's just another way that it manifests.

I'll give you a common example. If you give a thousand people aspirin, they are all not going to react the same. Some people are going to have side effects that are negative, some that are positive, some are going to get gastric ulcers, some headaches are going to go away, some are going to have problems with the detoxification of that (aspirin), some people are going to have allergic reactions.

Again, the same thing is said for the food. And that is why we look to the gene to make the diagnosis because when we look at the gene, it gives us propensities to reaction, and so when you are talking about prevention in preventative medicine, ultimately, we want to beat the disease before it ever appears.

If an ounce of prevention is worth a pound of cure, if we can stop a person from eating gluten when we identify that they shouldn't eat it, then oftentimes we can prevent disease from ever occurring if we catch it early enough.

**DCM:** But wouldn't you say that possibly or probably everybody on the planet should avoid gluten?

**DR. OSBORNE:** There is a scientific argument that can be made for that. A very good one actually.

**DCM:** We've seen so many people improve when they cut it out of their diet. Almost without exception, even people who thought they have no symptoms – they cut it out, and they cut out dairy and then they say, "I don't know what it is. But I just feel better, I feel lighter, my head is clearer", and they never had any kind of disease symptoms or any kind of disorder. So, we started thinking that this stuff might be poisonous for everybody. Perhaps you can tell us more about what is it in gluten that it is so difficult to digest?

**DR. OSBORNE:** If we think about what gluten is, most people think of it as wheat, barley and rye. But it goes much deeper than that.

Gluten is actually defined as the storage protein found in grain. And grain, in a nutshell, is the seed from grass. As grass grows, it sprouts the seed. The seed drops to the ground and re-grows the grass. Well, the seed itself is designed to survive. And when it comes to survival, part of that design is to survive digestion. So it tends to be difficult for humans to break down. And as it sits in the intestine, and it's not breaking down properly, we get fermentation and we can get other problems that occur.

We know that the seed aspect of the grain not digesting can actually feed bacteria in our intestine that creates a change in our normal bacterial flora and sometimes that change can be for the negative. It can produce more acid-producing types of bacteria that change the pH of the intestines – opening it up to what we know kind of loosely as leaky gut syndrome or intestinal permeability. And once that damage is done to the intestines, we open ourselves up to reacting to so many other foods. Because, once again, food is broken down in the intestines into

very small microscopic particles and what happens with leaky gut is we have these perforations that allow larger food molecules to flip through and stimulate the immune system to overreact. So, we just basically become over reactive to our environment.

Again, that grain, that gluten, has the ability to trigger that. *There is a protein that we make in response to eating gluten, called zonulin. And zonulin has been studied at the University of Maryland and found to actually cause leaky gut syndrome. Some doctors are now linking the same protein to leaky blood-brain barrier syndrome, which is why it can affect so many people's minds, and they've also linked it to leaky skin, which is where we can start to develop skin disorders like eczema or psoriasis.*

**DCM:** So just the fact that it doesn't digest or that it is designed to survive digestion would almost suggest that nobody should eat it.

**DR. OSBORNE:** That is why I said you could make that argument scientifically. Eating a food that is designed to survive (digestion in the grazing herbivore) is maybe not conducive to our good health.

The other argument that we could make is that in all the research we've done on celiac disease there are certain sub-gluten proteins. Because gluten is a very generic term, there are thousands of different glutes in different grains and these different proteins have immunostimulatory properties – a tendency to stimulate the immune system regardless of how we are digesting them.

And then you also have the fact that a number of people who eat gluten, they have what is called – again we go back to indigestibility of grain – a secondary reaction, which is when they don't digest it, it creates bacterial interaction with the gluten. That interaction can lead to toxic metabolic by-products and waste products that produce immune system reactions. So they are indirect immune reactions. They are not actually reactions to gluten itself, they are reactions to by-products of indigestibility.

**DCM:** So people are eating bread – 'the staff of life' – and it isn't really the staff of life. It is like a sword going into their body and just cutting everything up.

**DR. OSBORNE:** It can be. There is actually a nice bible verse in Genesis. I believe, it is Genesis 3. When God is expelling Adam and Eve from the Garden of Eden, one of the comments he makes is that "you shall peril and sweat in the wheat fields". Don't quote me on this, I'm not a biblical scholar. But he basically says that part of your punishment is that you have to toil in the grain fields.

**DCM:** There is an ancient Sufi legend that the Fall in Eden occurred because of the introduction of agriculture, specifically the growing of wheat. You said that gluten is in wheat, rye, barley, but

also in all the grains. Did we heard you correctly? Because when we talk about gluten-free foods there are still certain grains allowed.

**DR. OSBORNE:** Buckwheat, amaranth, and quinoa are pseudo-cereals, they are technically not grains. And so you can't classify them as the gluten containing grains. Although a lot of people do react to them because of cross-contamination and because of the way they are processed in facilities that also process other gluten containing grains. Now, you have other grains like rice, corn, millet, sorghum – these grains have never really been adequately studied. We've done probably a dozen studies on corn gluten and have found it to be reactive in patients with celiac disease.

In other words, these people who have celiac disease also react to the gluten called zein found in corn. But nobody has really gone back and looked at this. And a lot of your gluten-free substitutes, technically, they are not gluten-free. They haven't been studied well enough in light of the new research that has been coming out.

There is a study out of Australia where they studied wheat, barley and rye. What they were trying to do in celiac patients is identify the gluten protein most responsible for causing celiac disease. And what they found was actually a very big surprise for them – they found that there were about forty additional proteins (in gluten) that caused an immunological reaction in these patients. They found three, that they had not identified before, that caused extreme reaction, and the main protein that they found most reactive in this group of patients was not gliadin. Gliadin is the name of the gluten found in wheat that everybody likes to blame for celiac disease. So, this whole field of researcher is going to continue to open up and we are going to continue to learn more. But I think they really have it wrong when they say that wheat, barley and rye are the only glutes or the only grains that contain glutes that are dangerous for patients that are gluten intolerant or gluten sensitive or celiac.

I don't know how much – but we can go back in history a little bit. Dr. Willem Dicke from Holland actually found that during the WW II grain shortage and rationing children that had celiac disease in the hospital got better. That is actually where the link between celiac disease and gluten was identified.

Shortly after that, a number of other doctors did some really great studies on carbohydrates and the carbohydrates in grains and how they were difficult to digest. It was not just the grains per se with wheat, barley and rye – it was other grains as well. You may have heard of the term *specific carbohydrate diet* which is also gaining in popularity – it is a more specific diet that eliminates other types of carbohydrates that people don't tolerate very well.



**DCM:** When you are accepting a patient for treatment, do you actually send off for genetic studies to see what their genes look like before you formulate a healing plan?

**DR. OSBORNE:** You have to. There are two reasons why you have to test genetics.

One, people need a black and white answer. Maybe not everybody, but the majority of people need a black and white answer. If you just tell them to go gluten-free and see how they feel, 20% of the population will do that, based on your advice. But the other 80% will do it for a couple of weeks, feel a little bit better and say the diet is too hard, there is no way I can keep up with it, and they get off the diet and then they don't comply and then they stay sick. But when you genetically test them, now you can have kind of a black and white proof for them to see so it confirms in their own mind what they need to do.

But the second reason I do it is because I want to know what their genetic propensities to react are. This way I can customize change to their diets and justify it.

**DCM:** So being gluten-free is not a 20/80 rule. It must be a 100% gluten-free diet?

**DR. OSBORNE:** Yes, if you are gluten intolerant or gluten sensitive.

**DCM:** So, can't even cheat a little?

**DR. OSBORNE:** You can cheat, but there is always a consequence to that. If your body reacts to gluten when you eat it, the effect is there. We have identified that it is a dose response issue so the more you eat the more overreaction you can incite. But this doesn't hold true a 100% across the board. Because we have some people that are so sensitive that even a small amount of micro cross-contamination is enough to make them go to the hospital.

So, again, it is not recommended to cheat at all. This is another reason why I do genetic testing – if you know it is in your genetics, cheating is at odds with your genes. And human health boils down to your genetics plus your environment, and the mingling or commingling of these express either how healthy you are or how sick you are. So if you can control the factors that you know to control (you can't change your genetics but you can change your environment), you can change what you choose to eat.

So again, controlling the factors that you know to control will optimize your body's phenotypic expression of health versus that of disease.

**DCM:** So, if you are gluten sensitive and you go on a gluten-free diet, roughly how much time does it take to see improvements in health?

**DR. OSBORNE:** This will vary depending on the person. Typically very very sick people notice a difference within weeks. Sometimes within days. I have had patients that suffered from migraine headaches for years and years and years and had complete remission of the headache within two days. That's a fast turnaround. I had other patients with similar problems take two months. It depends on how compliant they are, it depends on how sick they are, it depends on other factors in their lifestyle. It's not just cutting gluten out, but sometimes there are other issues that have to be addressed that will couple with their response depending on how well they get and how fast they get well.

**DCM:** We have heard also that there are some similarities between gluten and casein – the protein in dairy, and that they have morphin-like properties in our system. You think people can be

self-medicating themselves with these morphin-like foods in a sense?

**DR. OSBORNE:** It happens all the time. This is one of the hardest parts of going gluten-free or dairy free – that you are going through drug withdrawal because these morphin-based peptides are addictive.

I can't remember where I read this, but it was a very eloquent way of putting it: food equals love, and when we are young we are introduced to all these foods – milk is probably one of the first food that we are introduced to – but then in every good time or every good moment in our lives we are introduced to foods like cakes, cupcakes, or candies, and they are always at (special) times like birthdays, or parties, etc., so that we tend to equate eating certain foods with good feelings, psychologically. So, when we add in peptides that act addictive, not only do we have a psychological addiction but we also have a chemical addiction.

**DCM:** I noticed that our local veterinarian has drug products that are derived from casein which they prescribe to calm down animals. Can the same mechanism apply to us, can we actually self-medicate to cover up pains or sufferings from some of our conditions – that if we were off gluten – some of our other sensitivities would become more evident?

**DR. OSBORNE:** People self-medicate with foods very very frequently. In the U.S., it's probably the biggest drug problem we have – food.

**DCM:** We discovered that children with autism often improve on a gluten- and dairy-free diet. Are the same morphin-like properties of gluten and dairy toxic to our brains?

**DR. OSBORNE:** For kids with autism there are a number of different correlations between how gluten affects the brain – most through the morphin-based type of proteins, as well as induction of leaky brain barrier, and so we get a barrier that's supposed to be very protective of the blood flow into the brain, and now it becomes open and so we get larger molecules that can pass through and start to create neurological damage and neurological inflammation. So gluten, again, can induce a drug-like effect, but it can also break down the barrier that protects the brain.

And then you've got other compounds – wheat specifically has a compound known as wheat germ agglutinin. That is a very very small molecule that can penetrate the blood-brain barrier and can trigger immune-like reactions as well. So there is more to it than just gluten and it's not to say that it affects all people in exactly the same way. Because in a number of people it affects them in different ways. That is why we have one study over here showing that this child going gluten-free did really really well and we have other studies over here saying that no, this group of kids didn't do all that well because different kids are different. And it also depends on how gluten-free they were. Were they wheat-, barley- and rye-free? Or were they still eating corn? Were they still eating rice, etc.? So, I think the answer to that question is that we don't have any exact answers. There are too many variables and there are too many things that we know people will react differently to – we know that individuals will react differently to the same thing. So I don't think there is one specific answer to that question.

**DCM:** Mercury toxicity symptoms often overlap or resembles autistic spectrum disorders. You think that an increase of heavy metal toxicity, for instance, mercury exposure, may be related to an increase in incidence of dairy and gluten sensitivity among the population?

**DR. OSBORNE:** I think that *it has a lot to do with increase in vaccinations, genetic modification of grains, the use of estrogen-based pesticides, fungicides, herbicides in our food products and the addition of gluten in so many things that we eat.*

If you follow what the government subsidizes in the way of food crops, wheat and corn are the cheapest things to grow. Wheat, corn, and soy. Because the government will pay for it – that is why it gets put into so many processed food items. So I think it is an increase in the overall consumption of grain in the diet of the average person, coupled with all kinds of contributing factors leading to this increased manifestation of what we are calling gluten sensitivity.

**DCM:** What are the most striking patients that you can remember in your practice. I mean, somebody who was really really sick and had a miraculous turnaround, or somebody who was resistant and tried your recommended treatment and got well.

**DR. OSBORNE:** Probably the most striking that I have seen is one man who had kidney failure, and when he came to me he had diabetes, he had high blood pressure, heart disease. I think they had told him his kidney function was down to 20%. We changed a lot of things about his diet, it wasn't just gluten, he had also other food sensitivities as well. And we did some supplementation to correct vitamin and mineral deficiencies. We did a lot of changing in his lifestyle. It took about 4 months and he went back to see his kidney and eye doctor. His eyes were normally functioning. He had retinal damage from the diabetes. That had improved or actually had reversed. His diabetes was gone, his blood sugar levels were normal, his hemoglobin A1c lab tests were normal. His blood pressure was way down, his weight dropped about 60 pounds. His kidney function has returned to full normal, which you never hear of something like that happening.

Another case I had was a young boy; he was actually terminal when he came to see me. He had been granted the Make-A-Wish Foundation wish because he didn't have long to live. I think they had given him six months. This was years ago when I first started really looking at gluten as a culprit. And we did a lot of the serum lab testing and we looked at anti-gliadin antibodies and anti-tissue transglutaminase antibodies to identify reactions to gluten. His serological markers came back negative, but his genetic markers came back positive. It took me several months to convince his mom to get him gluten-free.

Well, I think that in her case, in her own defense, she didn't really see a way out. Maybe she didn't really have full

confidence in me – so, initially, I think she didn't want to take things away from him as he only had six months. So I saw that psychological response going on in her head. But actually what finally convinced her – she went gluten-free herself first, and she had rheumatoid arthritis, and she got so much better. That's what gave her the confidence to take him fully off of it.

Now, this young boy had juvenile rheumatoid arthritis, he had a permanent stent embedded in his arm because he was in and out of the hospital every week. And that was about six years ago. Today he is growing and he is perfectly normal. Stent is out of his arm and his disease is well controlled.

I recently had a patient who had scans of the gallbladder and liver – she was diagnosed with non-alcoholic fatty liver disease. She didn't really drink a lot of alcohol, not enough to create cirrhosis, and they wanted to remove her gallbladder. They did a scan and she had reduced gallbladder function. Well, in two months on a gluten-free diet, her fatty liver was completely healed and her gallbladder was completely normalized. And I wanted to share that story with you because I think gallbladder surgery is one of the most detrimental surgeries that is done in the U.S. today, and they are done so aggressively, and the 10 year outcome of gallbladder surgery is fat malabsorption. And with malabsorption we get increased risk of pretty much every known disease because we malabsorb vitamin D, and vitamin A, and vitamins K and E, and omega-3 fatty acids, and that just creates a lot of secondary issues downstream.

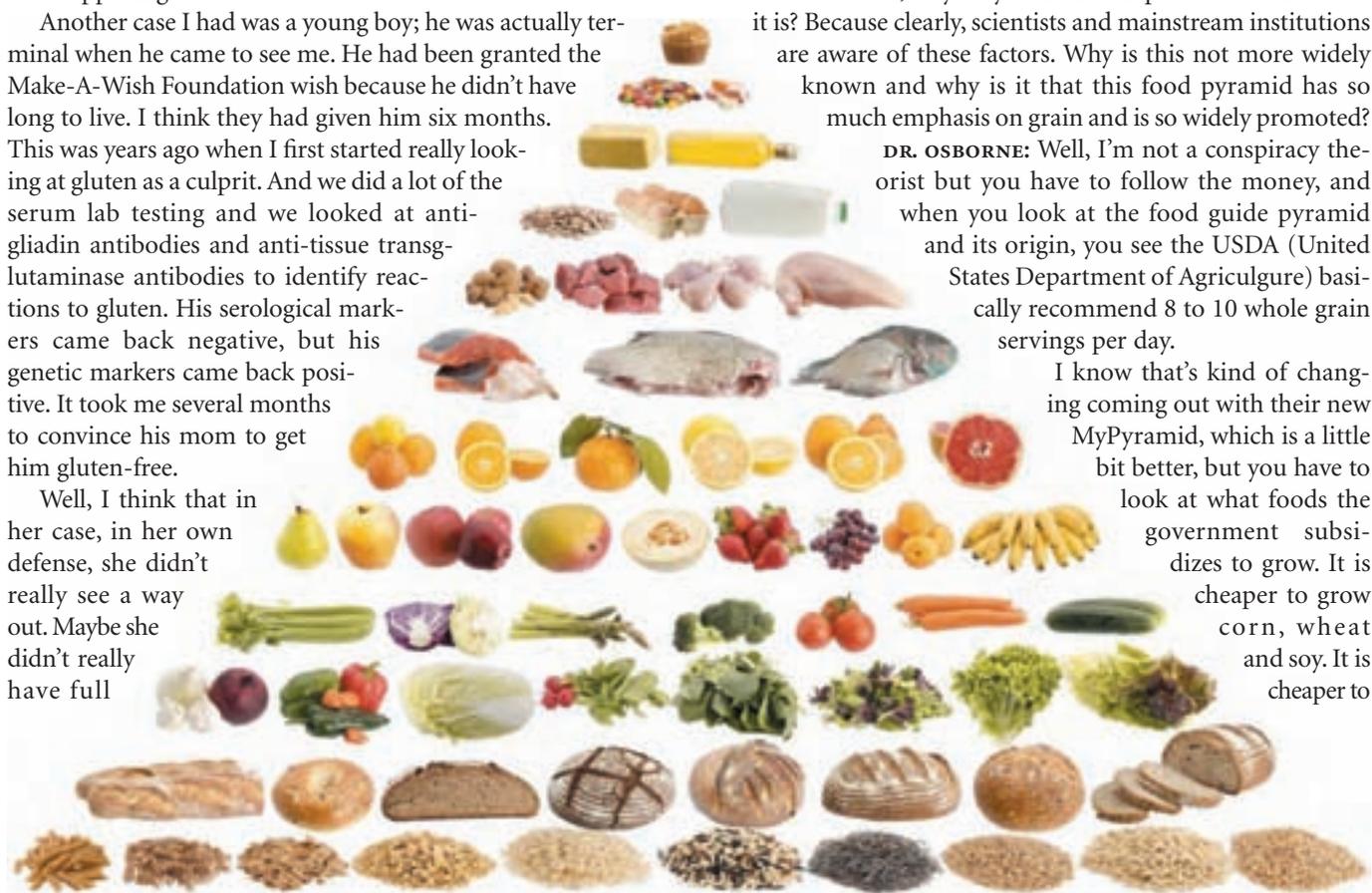
**DCM:** Is there anything somebody can do, who has had their gallbladder removed to compensate?

**DR. OSBORNE:** You want to make sure you are taking in adequate amounts of fats with a digestive enzyme that is going to help process that fat.

**DCM:** So, given what you told us about gluten and dairy and these substances, why do you think it is promoted as much as it is? Because clearly, scientists and mainstream institutions are aware of these factors. Why is this not more widely known and why is it that this food pyramid has so much emphasis on grain and is so widely promoted?

**DR. OSBORNE:** Well, I'm not a conspiracy theorist but you have to follow the money, and when you look at the food guide pyramid and its origin, you see the USDA (United States Department of Agriculture) basically recommend 8 to 10 whole grain servings per day.

I know that's kind of changing coming out with their new MyPyramid, which is a little bit better, but you have to look at what foods the government subsidizes to grow. It is cheaper to grow corn, wheat and soy. It is cheaper to



## ABOUT DR. PETER OSBORNE

*Dr. Peter Osborne is the clinical director of Town Center Wellness in Sugar Land, Texas. He is a doctor of chiropractic medicine, a Board Certified Clinical Nutritionist, an expert in orthomolecular and functional medicine and has been practicing since 2001. His clinical focus is the holistic natural treatment of chronic degenerative diseases. Dr. Osborne received his doctorate from Texas Chiropractic College. He has held faculty positions at Texas Women's University and HCC's nursing program teaching Neurophysiology, Nutrition, Biology, and Anatomy & Physiology. He lectures nationally to doctors on the topics of gluten sensitivity/intolerance, celiac disease, drug-induced nutritional deficiencies, and other nutritionally related topics. He is the co-founder of Nutra-MD, a nutritional supplement product line that addresses nutrient deficiencies caused by commonly prescribed medications. He is the host for the radio program Alternatives for Health & Wellness and the Executive Secretary for the American Clinical Board of Nutrition.*

make processed packaged food to feed the masses and the large percentages of people that we have in the world.

**DCM:** Wouldn't you consider following the money at the expense of other people's health something of a conspiracy?

**DR. OSBORNE:** It is certainly unethical. But I think the science is becoming more and more overwhelming; it will depend on how the funding goes.

The government funds a lot of research, but again, if the bad advice is coming from the government, how willing are they going to be to reduce or to minimize their position or their liability on a position that's been so wrong for so long. I just think that kind of change takes time and it takes an overwhelming amount of people anecdotally to force that change.

And that is what you see happening with the gluten-free movement. Like you said before, almost universally people can go gluten-free and feel better. And then if we have millions and millions of people doing that, you can't ignore it forever.

**DCM:** We've seen in a lot of natural food stores, they have gluten-free sections or collections of gluten-free foods, and most of those seem to be based on rice. It sounds to us like you are saying that those can still be potentially dangerous to people with gluten sensitivity. Is that right?

**DR. OSBORNE:** Not only are they potentially dangerous, I would say, they *are* dangerous. Rice has large percentage of protein, and 5% of the protein in rice comes from a type of gluten.

**DCM:** Is white rice better than brown rice?

**DR. OSBORNE:** No. Neither of them. They are both the same.

Now, wild rice is okay. Wild rice is a marsh grass. But rice in and of itself is a grain and it does have these storage gluten proteins in it. And the concentration of gluten is based on older research. Who knows if they have genetically modified it to contain more gluten type of proteins, because that is what gives it the cohesive sticky kind of chewy texture that we all like.

**DCM:** Can you soak it and ferment it and release some of that? Or is that another false path.

**DR. OSBORNE:** That is something that really hasn't been studied. At least to my knowledge, there could be something out there that I haven't read. I know they do a lot of fermentation with beans in a similar fashion. And some people will do sprouted grains, like the ezekeiel stuff. And I don't buy it.

**DCM:** We don't buy it either because some of us can feel the effects within 20 minutes of eating something. So we cut out beans, rice, literally all grains, except meat, vegetables and buckwheat. Basically, we are much better in a grain-free diet.

**DR. OSBORNE:** I think we are going to see more and more of it going in that direction.

**DCM:** Gluten is in most alcoholic beverages like beer, rice-based beverages, etc. Has there been any research done on recovering alcoholics and the problems that have come from gluten sensitivity and the ongoing gut permeability, and what really struck us – the blood-brain permeability that can come from that?

**DR. OSBORNE:** There have been some really good studies on the possible link between gluten sensitivity and alcoholism.

**DCM:** Do they point to the direction that that may actually be something that leads someone to be more prone to alcoholism?

**DR. OSBORNE:** Yes, the correlation of being gluten intolerant will predispose certain people to alcoholism.

Generally, what I have seen is that, not so much the celiac genotype, but the gluten sensitive genotype, the HLA-DQ 1 and 3, that tends to react more so, or have more tendency towards alcoholism.

Some say that when you distill the alcohol, you basically extract gluten peptides that are known to create the problems in gluten sensitivity. But we just see too much of that happening clinically and anecdotally in patients.

**DCM:** Do you have a book out?

**DR. OSBORNE:** I'm working on it.

**DCM:** It sounds to us like you really need to get a book. This is probably one of the most information packed conversations we had on the topic!

**DR. OSBORNE:** Thank you. ■



*"I'm afraid that it's terminal."*