

# The Many Faces of Gluten Intolerance

by Dr. Ritamarie Loscalzo

**M**ost people experience major health improvements when adopting a high raw vegan diet. For some, the changes are nothing short of miraculous. Weight loss, elimination of prescription medications, and increased energy levels happen almost overnight for some, yet others experience slow progress, and sometimes give up and go back to their old way of eating in frustration. If your raw diet includes sprouted grains, or if you are on a mostly raw diet, but still occasionally enjoy indulging in a piece of bread, a bowl of pasta or other gluten containing products, you may not be getting all the positive results you were expecting. Gluten is a protein found in the seeds, also called grains, of the grass family of plants, including wheat, rye, barley, spelt, triticale, kamut and oats. There is no gluten present in the grasses (wheat grass, barley grass) but there is gluten still present in sprouted grains, although in lesser amounts, since sprouting begins the breakdown of gluten into peptides and amino acids.

**Celiac disease** is a condition in which antibodies to gluten attack the lining of the small intestine, resulting in damage to its mucosal lining, leading to intestinal malabsorption, gas, bloating, and diarrhea. Celiac disease is estimated to effect between 1 and 3% of the population, although the prevalence is hard to estimate due to the widespread symptoms that it can exhibit. Dr. Scot Lewey, gastroenterologist, in a recent article for Celiac.com, describes what he calls non-celiac gluten sensitivity (NCGS) or gluten related disease

(GRD), which is gluten intolerance resulting in symptoms and illness similar to celiac disease without meeting diagnostic criteria for celiac disease. Most people think about gluten intolerance as being strictly an intestinal problem- gas, bloating, diarrhea, and irritable bowel. As it turns out, looking at gluten intolerance as strictly a gut thing is about as much the total picture as looking at a forest through a drinking straw. Gluten intolerance is now being linked to some major brain development and immune system disorders,

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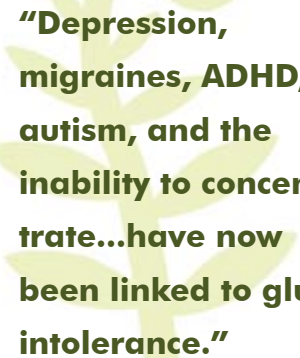


and the pathway is not exclusively through the gut. The pathway leads through the tricky landscape of biology and chemistry, via routes that seemed spectacularly improbable, say, 20 years ago. Depression, migraines, ADHD, autism, obsessive compulsive disorder, schizophrenia, balance problems, epilepsy, inability to concentrate, autoimmune thyroid disease, and dermatitis, are amongst the many non-digestive disorders that have now been linked to gluten intolerance. Dr. Lewey suggests that gluten intolerance affects as much as

10% to 30% of the population. When you consider the number of people on medications for the above mentioned brain and immune system disorders, it's possible that the numbers are even higher than Dr. Lewey suggests.

Intrigued by the clinical results of taking the gluten out of my patient's diets, and the second and third hand accounts of the widespread effects it seemed to have on all sorts of symptoms, I decided to do my research paper for nutrition relicensure on the health effects of gluten. The paper will be published in its entirety in the journal of nutritional perspectives within a few months, and the main highlights are presented here. The research for my paper was specifically related to the effects of gluten on neurodevelopmental disorders, like autism, Asperger's, ADHD, and OCD. When you consider family and friends, most of us feel the effects of these conditions, even if it's only through concern and compassion.

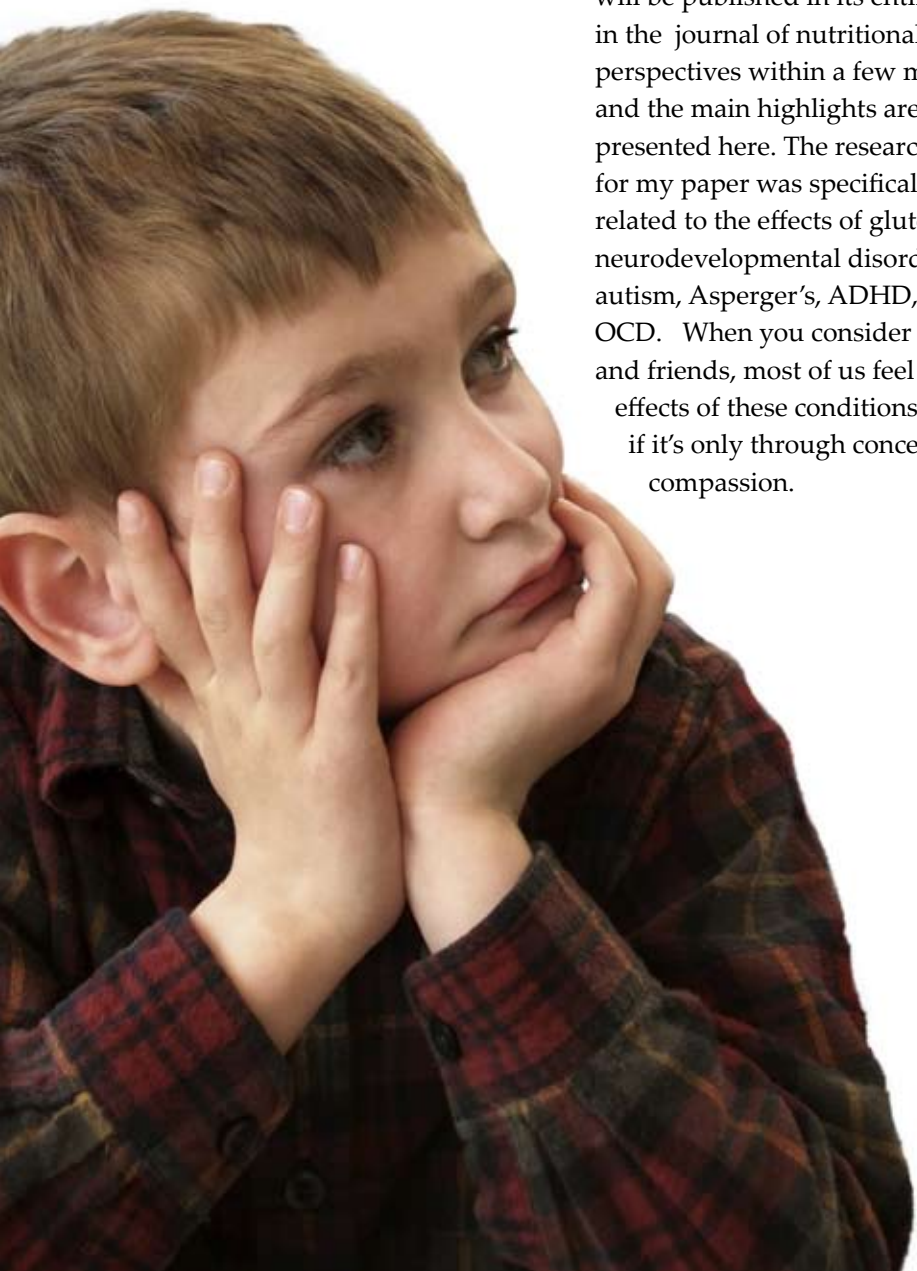
How can one little protein result in such widespread symptoms? Gluten works its mischief in several ways. One is by triggering autoimmune responses, another is by causing malabsorption of nutrients, and the third is through activation of opioid receptors in the brain.



**“Depression, migraines, ADHD, autism, and the inability to concentrate...have now been linked to gluten intolerance.”**

Yes, that “once I start I can’t stop” feeling that many people have about bread and other baked goods is actually similar to cocaine addiction. But more on that in a bit.

Let’s start by looking at the autoimmune effects of gluten. Autoimmune diseases are those in which antibodies (the cells produced by the immune system to defend us from foreign invaders) attack specific body tissues. For example, in autoimmune thyroiditis, there are antibodies that attack the thyroid gland. In lupus, there are antibodies against a wide range of tissues. Scientists have found that there is cross reactivity between gluten antibodies and specific body tissues, including the cerebellum (the part of the brain responsible for balance), the small intestinal lining cells, and thyroid tissue. In one study of patients with autoimmune thyroiditis and anti-gluten antibodies researchers found that after 6 months of strict gluten



avoidance, not only were the gluten antibodies gone, but so were the anti-thyroid antibodies, and symptoms were resolving.

Malabsorption of nutrients occurs along with gluten sensitivity as a result of damage to the small intestinal lining. Most nutrients are absorbed through what are known as the villi in the small intestine. These are damaged by the inflammation associated with gluten antibody attack and as a result, nutrients are not that well absorbed, and can result in poor growth and repair of the body in general. Malabsorption resulting in nutrient deficiencies explains in part the widespread effects of gluten.

As promised, back to the explanation of the “once I start I can’t stop” feeling that many people experience when eating bread and other baked goods. This leads us to the least well known and most recently explored effect of gluten--- on opioid receptors. These are receptors in the brain that control our pain and pleasure responses. You’ve likely heard of endorphins, released by the body during exercise and other activities, and their effects on decreasing pain and increasing the experience of pleasure. The breakdown of gluten produces several endorphin like opiate compounds, similar to cocaine, which when absorbed, bind to the opioid receptors in the brain. These can displace our own natural endorphins, and lead to widespread problems. In order to better explain this mechanism, let’s take an aside concerning the digestion of proteins. Recall that gluten is a protein. Proteins are long strings of amino acids. Digestion breaks these components apart. An intermediate step is the

formation of what are known as peptides - short chains of amino acids. In many people, particularly those whose digestion has been impaired by years of poor dietary choices and medications or those with a genetic tendency, the peptides never get split into amino acids, but are absorbed as peptides. The gluten peptides have been demonstrated to be especially resistant to breakdown, even in the laboratory test tube, with strong digestive enzymes added, so the absorption of opioid peptides is a widespread problem.

One of the complaints I hear when people embark upon a gluten free diet is that the cravings are so intense. This can be explained by the reaction of the opioid receptors to sudden withdrawal of the opioids. Now left unbound they are starving for more, similar to the mechanism found in drug, alcohol and nicotine withdrawal, and cravings result.

Have you ever observed the glazed over look and self mutilating behaviors that autistic kids often display? These behaviors have been linked to opioid peptides, from gluten as well as from casein (milk protein). Activation of the opioid receptors results in decreased pain sensitivity and the kids hurt themselves without even realizing it. The glazed over look is reminiscent of someone who is “high”. Exposure to opioid peptides early in brain development has been linked to destruction of brain cells during critical developmental periods, resulting in many of the developmental delays found



in autistic spectrum disorders. This is an oversimplification, and if you are interested, there are many papers available which go into detail about the chemistry involved.

People ask me why gluten sensitivity is suddenly so widespread. My response is that we are seeing it more because due to the deluge of processed gluten containing foods, hybridization to increase gluten content (gluten makes the bread rise better), the addition of gluten to baked goods to make them lighter, and the huge amount of gluten eaten by the average American. Doctors Brailey and Baker in their book *Dangerous Grains*, estimate that 50% or more of the intake of food in the average American’s diet is gluten!

*(continued on page 16)*

**“...avoidance of gluten, however challenging it may be, seems a small price to pay to impact the quality of life so dramatically.”**

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The general population is slow to accept that gluten may be at the root of their health problems. According to Dr Scot Lewey, gastroenterologist, "Gluten ingestion is an avoidable, treatable, and reversible cause of illness in many people. It is contributing to the rising epidemic of autoimmune diseases. Many resist these concepts finding them either unbelievable, unacceptable or both. I believe that their rejection is neither rational nor helpful. It may be reasonable to reject them for cultural or financial reasons though I don't believe they can legitimately be rejected based on scientific grounds or experience". For those suffering the life altering and often times debilitating effects of gluten, in conditions like depression, ADHD, autistic spectrum disorders and even schizophrenia, avoidance of gluten, however challenging it may be, seems a small price to pay to impact the quality of life so dramatically.

So what's the solution to the widespread problem of gluten intolerance? A raw and living foods diet certainly lessens the potential for gluten induced illness. If you suspect gluten intolerance, are suffering from any of the conditions mentioned at the beginning of this article, are not experiencing the level of health you expected from improving your diet, or have a relative who has been diagnosed with celiac disease, I recommend a strict gluten-free diet, avoiding even sprouted grains and Nama Shoyu, which contains wheat, for 6 months. If you see improvement, then lifelong avoidance of gluten is recommended, along with eating lots of fresh, raw fruits and vegetables. The change may be a challenge at first, but the results are worth it.

#### REFERENCES (abridged)

For a complete list of references (over 60) please go to [www.eLivingHealth.com](http://www.eLivingHealth.com) and visit the article section. For information about what foods contain gluten visit [www.celiac.com](http://www.celiac.com).

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Dr. Ritamarie Loscalzo is a licensed Chiropractor, Certified in Acupuncture, a Certified Clinical Nutritionist and a Diplomat of the American Board of Clinical Nutrition, a licensed HeartMath® one on one provider, a certified Living on Live Foods Chef, Instructor and Teacher, and is in training to become a Certified Herbalist. She began her relationship with raw and living vegan foods almost 22 years ago, after a struggle with illness brought her to research and begin to understand the relationship between diet and health. She has a passion for inspiring and motivating people towards reaching their health potential. She is available for one on one or group coaching, live or by telephone, living foods preparation classes, and as a motivational speaker. You can contact her at [DrRitamarie@eLivingHealth.com](mailto:DrRitamarie@eLivingHealth.com) or learn more about the services and classes she offers at [www.eLivingHealth.com](http://www.eLivingHealth.com) and [www.AustinHealthCoach.com](http://www.AustinHealthCoach.com)



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