

Gluten Free Diets

Are gluten free diets really good for your general wellness?

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Today we're going to point the skeptical eye at the promoters of gluten free diets. Gluten comes from wheat and at some level, just about any commercially available food either contains wheat or has trace contamination from wheat, so a gluten free diet is much easier said than done. It's become one of the new fads in health food stores, and some claim that such a diet can treat autism or obesity or any of a wide variety of conditions. Is gluten really something that would be good for most people to avoid? What exactly is it, what's it used for, and how does it affect our bodies?

The history of human culture is closely tied to the history of bread. Bread was one of our earliest portable foods, which made it possible to take long journeys. Its carbohydrate content made it a high energy food, and combined with its light weight, bread was about the best food you could have with you. Bread made it possible for humans to migrate, for armies to march, and for history to be made.

The earliest breads made from crushed corn or plant roots were poor in quality; they were like crumbling wafers that were hard to carry or preserve. Paradoxically, it was the development of agriculture that both kept people in place and allowed them to move. Wheats and other grains began to be used for bread; and as it turned out, wheats and a few related cereals like rye and barley contain a protein called gluten. Gluten is a long, tough molecule, and it's what gives modern bread dough its sponginess and elasticity. Bread baked from wheat flour resulted in loaves that didn't fall apart, and could be transported great distances. Gluten built the bread that built the world.

And since then, gluten has been used in a good many other foods as well. It's handy as a protein supplement, and as an all-natural way to add elasticity to foods. Such products as ketchup and ice cream are commonly thickened with gluten. Some pet foods use gluten as a way to boost the protein content without adding meat. Almost all imitation meats and cheeses prized by vegetarians are based on wheat gluten. And gluten is not just limited to food. Its long, tough molecules make it a key ingredient in some new bio-plastic materials as an alternative to petrochemicals. Gluten is even commonly used in cosmetics such as lipstick to help firm it up.

But there's been a growing trend in recent years to view gluten in a negative light. It is true that a small number of people are born with gluten sensitivities that reduce their ability to tolerate it to varying degrees. Something of a non-sequitur line of reasoning has followed, that if some people can't tolerate it, it therefore must be generally bad for everyone. Gluten's increasingly ubiquitous application in a growing number of food products has triggered suspicion of the food industry's motives. As a result, some promoters of fad diets and various health schemes are now advocating gluten free diets.

Gluten free diets actually are necessary for some people, and advisable for others. Without going into too much detail, the gluten protein consists of two other proteins, a prolamins and a glutelin. The principal prolamins and glutelins in wheat are gliadin and glutenin. Generally, when we discuss gluten sensitivities, gliadin and glutenin are the specific culprits. So let's take a quick look at the three basic types of gluten sensitivity. These are all legitimate medical conditions. They're quite rare, but they are real and patients need to be aware.

The first is celiac disease (CD), or gluten-sensitive enteropathy. This is an autoimmune disease of the small intestine that occurs in people with a genetic predisposition. It's not caused by gluten and you can't develop it by eating gluten, but if you're one of the unlucky few born with the gene, and you develop CD (which not everyone does), eating gluten will cause an adverse reaction. The immune system inside the bowel tissue improperly reacts to the gliadin protein, which causes inflammation of the bowel tissue, and interferes with your body's ability to absorb nutrients from food. There's no cure for CD, and the only way to live with it is to adopt a gluten free diet for the rest of your life. Roughly one tenth of one percent of Americans have this (1 in 1,000), give or take; the number is not well known. *[Addendum: The number may be as high as 8 in 1,000. - BD]*

A wheat allergy is very different, and can be harder to track down since there are many different components of wheats and other grains that it's possible to be allergic to. A wheat allergy is not a single condition; it is any of a great number of possible allergies. The symptoms are similar to what we expect from most allergies: hay fever type symptoms, hives, asthma, and swelling. More serious effects in the worst cases can include anaphylaxis, palpitations, swollen throat, diarrhea, even arthritis. Unlike CD patients, sufferers of wheat allergies need not necessarily avoid all wheat products. The allergy is usually pretty specific and only some foods may need to be avoided. Standard allergy treatment with any of a variety of drugs such as histamine blockers or leukotriene antagonists may prove effective enough to allow the patient to live with a normal diet. You need not eat wheat to have an allergic reaction, many workers who contact wheat can experience allergies as well. It's very difficult to attach a number to how many people have some level of allergy to some type of wheat related protein, but it's probably somewhere in the single digit percentage points.

There's also a third type of gluten sensitivity, and that's gluten sensitive idiopathic neuropathy. Idiopathic means the exact cause is not known, and a neuropathy is a disease of the nerves. Symptoms can include numbness or tingling in the extremities, or problems with muscular coordination often evidenced when walking, or even spasticity resembling epilepsy. Diagnosing this neuropathy has been really problematic. First, a common blood test for anti-gliadin antibodies frequently produces false positives, since many people have this antibody. And sometimes, sufferers may actually have a subclinical celiac disease instead. (Subclinical means it doesn't yet show up on tests or symptomatically.) Good numbers are not known on how many people may have a gluten sensitivity neuropathy, but it's probably in the range of a small fraction of 1%.

Yet those whose business is the sale of gluten free products would often have us believe that many more of us should buy them. GlutenFree.com and GlutenFreeMall.com claim their products help people with autism or ADHD, which is completely untrue according to all the science we have. The autism claim in particular is broadly repeated across the autism activist community. The treatment of autism with a gluten free diet has been studied a number of times with varying results, but so far no well designed studies have shown any plausible benefit. A 2006 double blinded study published in the *Journal of Autism and Developmental Disorders* tested children with and without autism, on gluten-free and placebo controlled diets, and found no significant differences in any group.

Do an internet search for "gluten free" and you'll find the term being misused by sellers of organic foods and other products, even vegan products and things sold as "cruelty free". Gluten is a purely vegetable, vegan substance that is, in every way, organic and all natural. So in many of these cases, the marketing boast "gluten free" exactly contradicts the vendor's claim of being vegan friendly. If you're a vegan, products containing gluten should be at the top of your list. It's an all-natural wheat protein.

Naturopaths routinely list gluten as a potential cause of disease in general. This is a medically bizarre claim. Proteins are essential for nutrition, and there is no evidence that

incidence of disease increased worldwide once wheat grain became a staple. It's true that bread itself is a rich source of carbohydrates, which are not essential and can be safely minimized in the diet, but this is true of gluten-free breads as well. By no logic should the strategy of avoiding carbohydrates be misconstrued as avoiding gluten.

So even if gluten is not the cause of any specific disease, at least for the vast majority of us who were not born with a gluten sensitivity, might it not be wise to still leave it out of our diets anyway, better safe than sorry? Keep in mind that a gluten free diet is no trivial matter. Every meal needs to be rethought, and many ingredients you always considered basic kitchen necessities will have to be thrown out. Forget most alcoholic beverages, and even many products labeled gluten-free, as many of these continue to be found to be contaminated with gluten-containing cereals.

The belief that a gluten-free diet is a good idea anyway has also been studied, and so far the only groups we've found that it may actually be somewhat helpful for are patients with Parkinson's disease, multiple sclerosis, and a few other conditions. As far as general wellness goes, there's neither a sound theory nor any evidence. The vast majority of people currently avoiding gluten for presumed health benefits are doing so for no nutritionally plausible reason. Gluten is not a fat or a carbohydrate that you might reasonably want to avoid; it's a protein that your body uses.

So think of gluten sensitivities in the same way you'd think of bee stings or peanut allergies: of great and very real concern to a small number of people, of some concern for a few more, and of no concern to the rest of us. Don't let anyone tell you that gluten is harming you in some way that's so far not supported by any science, or that you should avoid it for the purpose of general wellness. For most of us, gluten is our friend; but never forget that it is also, like many compounds, definitely harmful to some.



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