

# Gluten & Celiac

## What are the Facts?



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# WHOLE GRAINS: BREAKING BARRIERS CONFERENCE

November 9-11, 2014, Boston, MA

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## GLUTEN AND CELIAC: WHAT ARE THE FACTS?

*Wheat threatens all humans...*

*Gluten: What you don't know could kill you...*

*Is gluten ruining your health (or are we just all paranoid?)...*

Recent headlines like these show just how much misunderstanding and hysteria now cloud the facts about gluten, celiac disease, and gluten intolerance.

Much of our conference centers around this theme. The excellent book *Gluten Freedom* written by our keynote speaker, Dr. Alessio Fasano, also serves as a comprehensive reference, after the conference is over. Meanwhile, in this short section we'll summarize the basics.

### **Gluten & Celiac Disease: Key Points**

- Definition of and criteria for celiac disease
- Should we all avoid gluten? NO!
- Non-celiac gluten sensitivity? or FODMAPs?
- Don't self-diagnose
- Limitations of gluten-free and grain-free diets

### **Gluten Free Doesn't Mean Grain Free**

- Handy reference chart showing all gluten-free grains
- Tips for incorporating more gluten-free grains into every diet



## GLUTEN AND CELIAC: KEY POINTS

*At this conference you will learn a lot about gluten intolerance and Celiac Disease. The key points below are at the core of our conference messages.*

Gluten is a term used to refer to certain complex seed storage proteins found in wheat, barley, rye, and triticale (a wheat-rye hybrid). For most of us, our bodies rise to the challenge to process these wonderfully elastic proteins. However, in individuals with celiac disease, ingesting gluten, even as little as 1/8 teaspoon of flour, can trigger an immune response. Symptoms of celiac disease vary greatly, but luckily, doctors today have many diagnostic tools to test people for celiac disease. People with diagnosed celiac disease meet the following criteria:

- their blood tests positive for gluten antibodies
- they carry the genes for celiac disease
- their endoscopy reveals villi damage, and
- their symptoms resolve on a gluten-free diet.

Celiac disease is an autoimmune disease that destroys the body's villi, the fingerlike projections of the small intestine, which are responsible for nutrient absorption. Untreated celiac disease can lead to severe malnutrition and a host of other health problems. However, with strict adherence to a gluten-free diet, villi can regenerate, and patients can go about their daily lives with minimal symptoms.

**Should we all avoid gluten?** For the estimated 1% of the population with celiac disease, it's imperative to avoid gluten. But what about the rest of us? Some people without diagnosed celiac disease identify themselves as gluten intolerant, a condition sometimes identified as "non celiac gluten sensitivity" (NCGS). These patients report feeling lousy after eating gluten, and their symptoms may seem to clear up after following a gluten free diet, leaving some to wonder if we should all avoid gluten.

*There's no need.* Dr. Alessio Fasano, Founder and Director of the Center for Celiac Research, does "not share the position of the proponents of a gluten-free world." He reminds us that "We engage daily in a war with many dangerous bacteria but rarely do we lose this battle, which is an event that leads to infection. We are also engaged in a daily confrontation with gluten, but only a minority of us will lose this battle. These are the genetically susceptible individuals who will develop gluten-related disorders."

Source: Alessio Fasano, *Gluten Freedom* (Nashville: Wiley General Trade, 2014), 25.

**What about FODMAPs?** Additionally, a new body of research indicates that in many cases of gluten sensitivity it is not the gluten protein, but rather a class of molecules known by the acronym FODMAPs that may be to blame. FODMAPs (fermentable oligosaccharides, disaccharides, monosaccharides and polyols) are fermentable, poorly digested short chain carbohydrates found not only in wheat, barley and rye, but in a wide range of other everyday foods, including in dairy, onions, garlic, some fruit, and some legumes.

In an Australian study, 37 patients who self reported as gluten intolerant entered a study to see how their bodies responded to various diets. After a 2-week low-FODMAP washout diet, the participants consumed a diet that contained gluten, whey protein (a food high in

FODMAPs), or a combination of both for one week. The results of this study brought up questions about the generally accepted existence of non celiac gluten intolerance, as 92% of the participants continued to experience negative symptoms when gluten was removed from their diet (during the whey protein treatment). In fact, their symptoms were only relieved when they consumed the low-FODMAP washout diet between treatments.

Source: Jessica R. Biesiekierski et al., “No Effects of Gluten in Patients With Self-Reported Non-Celiac Gluten Sensitivity After Dietary Reduction of Fermentable, Poorly Absorbed, Short-Chain Carbohydrates,” *Gastroenterology* 145, no. 2 (August 2013):320-328, doi: 10.1053/j.gastro.2013.04.051

**Don't self-diagnose!** Although this study is small, it points to the importance of seeking medical care instead of self-diagnosing gluten intolerance. Eliminating gluten makes celiac testing more difficult –and could leave people unaware of the need to cut other high-FODMAP foods from their diets. No diagnostic tools are yet available for gluten intolerance, but a doctor can work with you to help determine what course of action is best for you.

**Gluten free doesn't mean grain free.** For people who can't tolerate gluten, it's important to remember that gluten-free doesn't mean grain free. In fact, including whole grains in a gluten-free diet is one of the best ways to protect against the nutrient deficiencies associated with gluten-free diets. Most whole grains are naturally gluten-free. Two widely available and inexpensive examples are brown rice and corn. But beyond that, there are quinoa, millet, amaranth, buckwheat, and teff, just to name a few (for a more extensive list, see the chart on page 5-5). Variety, not deprivation, is the name of the game.

**Limitations of gluten-free and grain-free diets.** In addition to the small percentage of people who are troubled by gluten, an increasing number of people are pursuing a gluten-free diet in hopes that they will lose weight. This faddism is misguided, however, as celiac authority and assistant Harvard professor Dr. Daniel Leffler warns that adhering to a gluten-free diet is often associated with weight gain. Gluten (mainly from wheat) makes an easy scapegoat, but other countries with much higher per-capita wheat consumption have much lower rates of overweight and obesity. (The French, for instance, consume twice as much wheat per person as Americans, but have about one-third our obesity rate.)

Weight problems are almost never the fault of one food; it's total diet and lifestyle that matter. Any dietary pattern that severely restricts a food group will often lead to short-term weight loss, because the options for what you can eat drastically diminish. As Fred Brouns of Maastricht University explains, “The argument that refraining from consumption of wheat in the daily diet induces weight loss should also be interpreted in the light of the fact that a very limited number of foods available in the market do not contain wheat. This limited availability of wheat-free foods may itself cause consumption monotony, leading to reduced overall intake of food and energy.”

Similarly, other misguided dieters and athletes choose a gluten-free diet because they believe it will decrease inflammation. In people with Celiac Disease and some gluten sensitivities, the body perceives gluten as an enemy, and produces an inflammatory immune response. But for the vast majority of the population without gluten disorders, *this isn't the case*. In fact, eating whole grains, including ones that contain gluten, is associated

with decreased inflammation. In a recent clinical trial<sup>1</sup>, researchers at the University of Nebraska showed that eating a cup of whole grain barley or brown rice (or a combination of the two) for as little as four weeks can increase the "good" bacteria in your gut that fight inflammation.

Why go against the grain? Whether or not you can tolerate gluten, science shows that whole grains are the path to health.

Sources:

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Mamta Badkar, "The World's Biggest Wheat Exporting Countries," *Business Insider*, April 30, 2011, <http://www.businessinsider.com/the-worlds-biggest-wheat-exporting-countries-2011-4?op=1>.

"Health > Obesity: Countries Compared," NationMaster using 2005 OECD Health Data, <http://www.nationmaster.com/country-info/stats/Health/Obesity>.

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<sup>1</sup> Jens Walter, Ines Martinez, and Devin J. Rose, "Holobiont nutrition: Considering the role of the gastrointestinal microbiota in the health benefits of whole grains," *Gut Microbes* 4, no. 4 (April 2013): 340-346, accessed September 12, 2014, doi: 10.4161/gmic.24707

## GLUTEN FREE DOESN'T MEAN GRAIN FREE

People following a gluten-free diet may be surprised – and delighted – to learn that most grains are gluten-free. Only three common grains (wheat, barley and rye) and the less common triticale (a wheat-rye hybrid) must be avoided on a GF diet, leaving lots of great choices, as shown in the chart below:

Gluten Grains	Gluten-Free Grains		
Barley	Amaranth	Buckwheat	Corn
Rye	Millet	Quinoa	Rice
Triticale	Sorghum	Teff	Wild Rice
Wheat	Oats*		

\* Oats are naturally gluten-free but are often contaminated by nearby gluten grains during growing, harvesting, storage, or processing. Look for oats tested as gluten-free.

All of these gluten-free grains are healthier when they're enjoyed in their whole form. Whole grains include all three of a grain kernel's edible parts – the bran, the germ, and the endosperm – in their original proportions. All too often, grains are refined, which means their bran and germ (the healthiest parts!) are removed, leaving only the starchy endosperm. Whole grains have two to three times more of most minerals and vitamins than refined grains, and more fiber too.

They also have more flavor. As you switch to whole grains, at first you may be caught off guard by their fuller, nuttier taste. Soon, you'll find that you've become fond of whole grains and the grains you used to eat same bland in comparison.

To get your taste buds in shape gradually, start with grains that have a more neutral flavor, such as sorghum and brown rice. Corn's a good choice, too; it has a distinct but familiar flavor (look for whole cornmeal; degerminated corn has had the healthy germ removed). As the flavor of whole grains begins to grow on you, experiment with more grains: try some wild rice mixed in with brown rice, or toss some cooked quinoa with chopped vegetables and your favorite salad dressing for a great warm-weather meal. Less common grains – amaranth, millet, buckwheat and teff – await you down the line.

When you're looking to bake with gluten-free grains, look for mixes that feature whole grain ingredients prominently. Some GF baking mixes and flour substitutes rely almost exclusively on ingredients like potato starch and white rice flour, leaving these mixes short on important nutrients and fiber. Better mixes include high levels of a variety of tasty whole grains – because people on a gluten-free diet deserve the best!

Even those who don't need to follow a gluten-free diet will benefit from eating a wider range of whole grains. Carrots are a great vegetable – but eating a wide variety of vegetables gives you a wider variety of nutrients (and tastes). It's the same with whole grains: whether you're eating gluten-free or not, treat yourself to the wonderful tastes of a wide variety of naturally gluten-free grains, for good taste and good health.