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## Three Hidden Ways Wheat Makes You Fat

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Gluten-free is hot these days. There are books and websites, restaurants with gluten free menus, and grocery stores with hundreds of new [gluten-free](#) food products on the shelf. Is this a fad, or a reflection of response to a real problem?

Yes, gluten is a real problem. But the problem is not just gluten. In fact, there are **three major hidden reasons** that wheat products, not just gluten (along with sugar in all its forms) is a major contributor to obesity, diabetes, heart disease, cancer, dementia, depression and so many other modern ills.

This is why there are now 30 percent more obese than undernourished in the world, and why chronic lifestyle and dietary driven disease kills more than twice as many people as infectious disease globally. These non-communicable, chronic diseases will cost our global economy \$47 trillion over the next 20 years.

Sadly, this tsunami of chronic illness is increasingly caused by eating our beloved diet staple, bread, the staff of life, and all the wheat products hidden in everything from soups to vodka to lipstick to envelope adhesive.

The biggest problem is wheat, the major source of gluten in our diet. But wheat weaves its misery through many mechanisms, not just the gluten! The history of wheat parallels the history of chronic disease and obesity across the world. Supermarkets today contain walls of wheat and corn disguised in literally hundreds of thousands of different food-like products, or FrankenFoods. Each American now consumes about 55 pounds of wheat flour every year.

It is not just the amount but also the hidden components of wheat that drive weight gain and disease. This is not the wheat your great-grandmother used to bake her bread. It is FrankenWheat -- a scientifically engineered food product developed in the last 50 years.

## **How Wheat -- and Gluten -- Trigger Weight Gain, Prediabetes, Diabetes and More**

This new modern wheat may look like wheat, but it is different in three important ways that all drive obesity, diabetes, heart disease, cancer, dementia and more.

1. It contains a **Super Starch** -- amylopectin A that is super fattening.
2. It contains a form of **Super Gluten** that is super-inflammatory.
3. It contains forms of a **Super Drug** that is super-addictive and makes you crave and eat more.

### **The Super Starch**

The Bible says, "Give us this day our daily bread." Eating bread is nearly a religious commandment. But the Einkorn, heirloom, Biblical wheat of our ancestors is something modern humans never eat.

Instead, we eat dwarf wheat, the product of genetic manipulation and hybridization that created short, stubby, hardy, high-yielding wheat plants with much higher amounts of starch and gluten and many more chromosomes coding for all sorts of new odd proteins. The man who engineered this modern wheat won the Nobel Prize -- it promised to feed millions of starving around the world. Well, it has, and it has made them fat and sick.

The first major difference of this dwarf wheat is that it contains very high levels of a super starch called **amylopectin A**. This is how we get big fluffy Wonder Bread and Cinnabons.

Here's the downside. **Two slices of whole wheat bread now raise your blood sugar more than two tablespoons of table sugar.**

There is no difference between whole wheat and white flour here. The biggest scam perpetrated on the unsuspecting public is the inclusion of "whole grains" in many processed foods full of sugar and wheat, giving the food a virtuous glow. The best way to avoid foods that are bad for you is to stay away from foods with health claims on the labels. They are usually hiding something bad.

In people with diabetes, both white and whole grain bread raises blood sugar levels 70 to 120 mg/dl over starting levels. We know that foods with a high glycemic index make people store belly fat, trigger hidden fires of inflammation in the body and give you a fatty liver, leading the whole cascade of obesity, pre-diabetes and diabetes. This problem now affects every other American and is the major driver of nearly all chronic disease and most our health care costs. Diabetes now sucks up one in three Medicare dollars.

### **The Super Gluten**

Not only does this dwarf, FrankenWheat, contain the super starch, but it also contains super gluten which is much more likely to create inflammation in the body. And in addition to a host of inflammatory and chronic diseases caused by gluten, it causes obesity and diabetes.

Gluten is that sticky protein in wheat that holds bread together and makes it rise. The old fourteen-chromosome-containing Einkorn wheat codes for the small number of gluten proteins, and those that it does produce are the least likely to trigger celiac disease and inflammation. The new dwarf wheat contains twenty-eight or twice as many chromosomes and produces a large variety of gluten proteins, including the ones most likely to cause celiac disease.

### **Five Ways Gluten Makes You Sick and Fat**

Gluten can trigger inflammation, obesity and chronic disease in five major ways.

1. Full-blown celiac disease is an autoimmune disease that triggers body-wide inflammation triggering insulin resistance, which causes weight gain and diabetes, as well as over 55 conditions including autoimmune diseases, irritable bowel, reflux, cancer, depression, osteoporosis and more.
2. Low-level inflammation reactions to gluten trigger the same problems even if you don't have full-blown celiac disease but just have elevated antibodies (7 percent of the population, or 21 million Americans).
3. There is also [striking new research](#) showing that adverse immune reactions to gluten may result from problems in very different parts of the immune system than those implicated in celiac disease. Most doctors dismiss gluten sensitivity if you don't have a diagnosis of celiac disease, but this new research proves them wrong. Celiac disease results when the body creates antibodies against the wheat (adaptive immunity), but another kind of gluten sensitivity results from a generalized activated immune system (innate immunity). This means that people can be gluten-sensitive without having celiac disease or gluten antibodies and still have inflammation and many other symptoms.
4. A NON-gluten glycoprotein or lectin (combination of sugar and protein) in wheat called wheat germ agglutinin (WGA)[1] found in highest concentrations in whole wheat increases whole body inflammation as well. This is not an autoimmune reaction, but can be just as dangerous and cause heart attacks.[2]
5. Eating too much gluten-free food (what I call gluten-free junk food) like gluten-free cookies, cakes and processed food. Processed food has a high glycemic load. Just because it is gluten-free, doesn't mean it is healthy. Gluten-free cakes and cookies are still cakes and cookies! Vegetables, fruits, beans, nuts and seeds and lean animal protein are all gluten free -- stick with those.

Let's look at this a little more closely. Gluten, a protein found in wheat, barley, rye, spelt and oats, can cause celiac disease, which triggers severe inflammation throughout the body and has been linked to autoimmune diseases, mood disorders, autism, schizophrenia, dementia, digestive disorders, nutritional deficiencies, diabetes, cancer and more.

### **Celiac Disease: The First Problem**

Celiac disease and gluten-related problems have been increasing, and now affect at least 21 million Americans and perhaps many millions more. And 99 percent of people who have problems with gluten or wheat are NOT currently diagnosed.

Ninety-eight percent of people with celiac have a genetic predisposition known as HLA DQ2 or DQ8, which occurs in 30 percent of the population. But even though our genes haven't changed, we have seen a dramatic increase in celiac disease in the last 50 years because of some environmental trigger.

In a recent study that compared blood samples taken 50 years ago from 10,000 young Air Force recruits to samples taken recently from 10,000 people, researchers found something quite remarkable. There has been a real 400 percent increase in celiac disease over the last 50 years.[3] And that's just the full-blown disease affecting about one in 100 people, or about three million Americans. We used to think that this only was diagnosed in children with bloated bellies, weight loss and nutritional deficiencies. But now we know it can be triggered (based on a genetic susceptibility) at any age and without ANY digestive symptoms. The inflammation triggered by celiac disease can drive insulin resistance, weight gain and diabetes, just like any inflammatory trigger -- and I have seen this over and over in my patients.

### **Gluten and Gut Inflammation: The Second Problem**

But there are two ways other than celiac disease in which wheat appears to be a problem.

The second way that gluten causes inflammation is through a low-grade autoimmune reaction to gluten. Your immune system creates low-level antibodies to gluten, but doesn't create full-blown celiac disease. In fact, 7 percent of the population, 21 million, have these anti-gliadin antibodies. These antibodies were also found in 18 percent of people with autism and 20 percent of those with schizophrenia.

A major study in the *Journal of the American Medical Association* reported that hidden gluten sensitivity (elevated antibodies without full-blown celiac disease) was shown to increase risk of death by 35 to 75 percent, mostly by causing heart disease and cancer.[4] Just by this mechanism alone, over 20 million Americans are at risk for heart attack, obesity, cancer and death.

### **How does eating gluten cause inflammation, heart disease, obesity, diabetes and cancer?**

Most of the increased risk occurs when gluten triggers inflammation that spreads like a fire throughout your whole body. It damages the gut lining. Then all the bugs and partially-digested food particles inside your intestine get across the gut barrier and are exposed your immune system, 60 percent of which lies right under the surface of the one cell thick layer of cells lining your gut or small intestine. If you spread out the lining of your gut, it would equal the surface area of a tennis court. Your immune system starts attacking these foreign proteins, leading to systemic inflammation that then causes heart disease, dementia, cancer, diabetes and more.

Dr. Alessio Fasano, a celiac expert from the University of Maryland School of Medicine, discovered a protein made in the intestine called "zonulin" that is increased by exposure to gluten.[5] Zonulin breaks up the tight junctions or cement between the intestinal cells that normally protect your immune system from bugs and foreign proteins in food leaking across the intestinal barrier. If you have a "leaky gut," you will get inflammation throughout your whole body and a whole list of symptoms and diseases.

## **Why is there an increase in disease from gluten in the last 50 years?**

It is because, as I described earlier, the dwarf wheat grown in this country has changed the quality and type of gluten proteins in wheat, creating much higher gluten content and many more of the gluten proteins that cause celiac disease and autoimmune antibodies.

Combine that with the damage our guts have suffered from our diet, environment, lifestyle and medication use, and you have the perfect storm for gluten intolerance. This super gluten crosses our leaky guts and gets exposed to our immune system. Our immune system reacts as if gluten was something foreign, and sets off the fires of inflammation in an attempt to eliminate it. However, this inflammation is not selective, so it begins to attack our cells -- leading to diabetes and other inflammatory diseases.

Damage to the gastrointestinal tract from overuse of antibiotics, anti-inflammatory drugs like Advil or Aleve and acid-blocking drugs like Prilosec or Nexium, combined with our low-fiber, high-sugar diet, leads to the development of celiac disease and gluten intolerance or sensitivity and the resultant inflammation. That is why elimination of gluten and food allergens or sensitivities can be a powerful way to prevent and reverse diabetes and many other chronic diseases.

## **The Super Drug**

Not only does wheat contain super starch and super gluten -- making it super fattening and super inflammatory -- but it also contains a super drug that makes you crazy, hungry and addicted.

When processed by your digestion, the proteins in wheat are converted into shorter proteins, "polypeptides," called "exorphins." They are like the endorphins you get from a runner's high and bind to the opioid receptors in the brain, making you high, and addicted just like a heroin addict. These wheat polypeptides are absorbed into the bloodstream and get right across the blood brain barrier. They are called "gluteomorphins," after "gluten" and "morphine."

These super drugs can cause multiple problems, including schizophrenia and autism. But they also cause addictive eating behavior, including cravings and bingeing. No one binges on broccoli, but they binge on cookies or cake. Even more alarming is the fact that you can block these food cravings and addictive eating behaviors and reduce calorie intake by giving the same drug we use in the emergency room to block heroin or morphine in an overdose, called naloxone. Binge eaters ate nearly 30 percent less food when given this drug.

**Bottom line: wheat is an addictive appetite stimulant.**

## **How to Beat the Wheat, and Lose the Weight**

First, you should get tested to see if you have a more serious wheat or gluten problem.

If you meet any of these criteria, then you should do a six-week 100 percent gluten-free diet trial to see how you feel. If you have three out of five criteria, you should be gluten-free for life.

1. You have symptoms of celiac (any digestive, allergic, autoimmune or inflammatory disease, including diabetes).
2. You get better on a gluten-free diet.
3. You have elevated antibodies to gluten (anti-gliadin, AGA, or tissue transglutaminase antibodies, TTG).
4. You have a positive small intestinal biopsy.
5. You have the genes that predispose you to gluten (HLA DQ2/8).

Second, for the rest of you who don't have gluten antibodies or some variety of celiac -- the super starch and the super drug, both of which make you fat and sick, can still affect you. So go cold turkey for six weeks. And keep a journal of how you feel.

The problems with wheat are real, scientifically validated and ever-present. Getting off wheat may not only make you feel better and lose weight, it could save your life.

My personal hope is that together we can create a national conversation about a real, practical solution for the prevention, treatment, and reversal of our obesity, diabetes and chronic disease epidemic. Getting off wheat may just be an important step.

*To learn more and to get a free sneak preview of The Blood Sugar Solution where I explain exactly how to avoid wheat and what to eat instead go to [www.drhyman.com](http://www.drhyman.com).*

*Please leave your thoughts by adding a comment below.*

To your good health,

Mark Hyman, MD

#### **References:**

- [1] Saja K, Chatterjee U, Chatterjee BP, Sudhakaran PR. "Activation dependent expression of MMPs in peripheral blood mononuclear cells involves protein kinase." *A. Mol Cell Biochem.* 2007 Feb;296(1-2):185-92
- [2] Dalla Pellegrina C, Perbellini O, Scupoli MT, Tomelleri C, Zanetti C, Zoccatelli G, Fusi M, Peruffo A, Rizzi C, Chignola R. "Effects of wheat germ agglutinin on human gastrointestinal epithelium: insights from an experimental model of immune/epithelial cell interaction." *Toxicol Appl Pharmacol.* 2009 Jun 1;237(2):146-53.
- [3] Rubio-Tapia A, Kyle RA, Kaplan EL, Johnson DR, Page W, Erdtmann F, Brantner TL, Kim WR, Phelps TK, Lahr BD, Zinsmeister AR, Melton LJ 3rd, Murray JA. "Increased prevalence and mortality in undiagnosed celiac disease." *Gastroenterology.* 2009 Jul;137(1):88-93
- [4] Ludvigsson JF, Montgomery SM, Ekbom A, Brandt L, Granath F. "Small-intestinal histopathology and mortality risk in celiac disease." *JAMA.* 2009 Sep 16;302(11):1171-8.

[5] Fasano A. "Physiological, pathological, and therapeutic implications of zonulin-mediated intestinal barrier modulation: living life on the edge of the wall." *Am J Pathol.* 2008 Nov;173(5):1243-52.

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