

Modern Wheat - Old Diet Staple Turned Into a Modern Health Nightmare

By Michelle Toole

Wheat is a highly controversial food these days. On one hand, we've got people telling us that it is extremely harmful, with one doctor calling it poison. (Learn more here

<http://www.cbsnews.com/news/modern-wheat-a-perfect-chronic-poison-doctor-says/>)

Then on the other hand, we've got dietitians and the government telling us that whole wheat is an essential part of a "balanced" diet. Well... one inescapable fact is that humans have been consuming wheat, in one form or another, for *thousands* of years. It is an old food... and most diet-related diseases are relatively new. Therefore, it doesn't make sense to blame old wheat for these new health problems. However... it's important to realize that wheat today is **not the same** as it was a thousand, one hundred or even 60 years ago.

How Has Wheat Changed?

Wheat today is completely different from the wheat we ate back in the day. (Learn more here

<http://www.grainstorm.com/pages/modern-wheat>)

First of all, it is processed differently. New techniques in grain processing in the late 19th century made it possible to create massive amounts of refined wheat for a low cost. We are now able to separate the nutritious components of the grain (the bran and germ) away from the endosperm, where most of the starchy carbs are contained. This led to an obvious reduction in nutrient density and gave refined wheat the ability to spike blood sugar very fast.

But we also used to *prepare* our grains differently. They were soaked, sprouted, fermented and bread was baked using slow rise yeast. (Learn more here <http://wholehealthsource.blogspot.com/2010/05/traditional-preparation-methods-improve.html>)

Sprouting and fermenting grains leads to many beneficial effects. It increases the amino acid lysine, reduces anti-nutrients (like phytic acid and lectins), disables enzyme inhibitors and makes nutrients more accessible (1, 2, 3, 4, 5).

Today, the flour is bleached and the bread is baked with quick rise yeast. The grains certainly aren't soaked, sprouted or fermented. Based on these factors alone, it is clear that the bread and pasta we are eating today is **very** different from the traditionally prepared wheat we have been eating for thousands of years.

Bottom Line: Wheat is processed and prepared differently these days, which makes it less nutritious and more harmful than traditionally prepared wheat.

Today's Wheat is Genetically and Biologically Different

The plants that wheat is made from are not all the same. There are different breeds of wheat... just like there are many different breeds of dogs (a Chihuahua is very different from a German Shepherd, for example). Back in the day, we used to consume ancient varieties like Emmer, Einkorn and Kamut. (Learn more about Einkorn here http://en.wikipedia.org/wiki/Einkorn_wheat)

However, almost *all* of the wheat eaten today is high-yield dwarf wheat, which was developed by cross-breeding and crude genetic manipulation around the year 1960. Dwarf wheat has shorter stems and a much greater yield. Therefore it is much, much cheaper than the older varieties and more economically feasible.

The benefits of a high-yield crop are obvious, but we are now learning that there were some major downsides to this as well. Specifically, modern wheat has some subtle but important differences in its nutrient and protein composition.

Bottom Line: Modern wheat was introduced around the year 1960. It was developed via cross-breeding and crude genetic manipulation, which changed the nutrient and protein composition of the plant.

Modern Wheat is Less Nutritious

The Broadbalk Wheat Experiment is one of the longest running scientific studies in history. (Learn more about the experiment here <http://www.era.rothamsted.ac.uk/index.php?area=home&page=index&dataset=4>)

Since the year 1843, the scientists have grown different strains of wheat and analyzed various factors, including nutrient composition. From 1843 until about 1960, the nutrients in wheat didn't change much. However, from the year 1960, which coincides with the introduction of modern wheat, the nutrient content starts trending downwards.

Concentrations of Zinc, Copper, Iron and Magnesium were **19-28% lower** in the years 1968-2005, compared to 1845-1967 (6). At the same time, there was no evidence that the soil had changed. So it is clearly something about the nature of modern wheat that makes it less nutritious than the older varieties.

Another study that also compared different strains of wheat found that the older varieties contained significantly more Selenium (7).

Given how **incredibly** widespread wheat consumption really is, it is easy to see how this may have contributed to nutrient deficiencies.

Bottom Line: Modern wheat is less nutritious than old wheat. The amount of minerals like Zinc, Copper, Iron and Magnesium has decreased by 19-28%.

Modern Wheat is Much More Harmful to Celiac Patients

Celiac disease is the most severe form of gluten intolerance. When people with this disease eat wheat, the immune system in the gut mistakenly assumes that the gluten proteins are foreign invaders and mounts an attack. However... the immune system doesn't only attack the gluten proteins, it also attacks the gut lining itself, leading to degeneration of the intestinal lining, leaky gut, massive inflammation and various harmful effects (8).

Celiac disease is serious business... it has been on the rise for decades, increasing about fourfold in the past 45 years. Right now, about 1% of people have celiac disease (9, 10).

Another condition, called non-celiac gluten sensitivity, is believed to be much more common, perhaps afflicting around 6-8% of people (11, 12).

Gluten is actually not a single protein, it is a family of different proteins and only some of them are recognized by the immune system of celiac patients. One of the gluten proteins that seems to be problematic is called Gliadin- α 9. One study found that the amount of this protein is significantly higher in modern wheat (13). Therefore... many researchers have speculated that modern wheat, due to its higher amount of problematic gluteins, may be worse for celiac patients than older varieties of wheat.

Interestingly, this has been tested in several studies. One study compared the effects of Einkorn (old) and modern wheat on intestinal cells from celiac patients. Compared to modern wheat, Einkorn didn't have any harmful effects (14).

In another study in 12 celiac patients, gluten from Einkorn caused significantly less adverse reactions than modern gluten and was **even better tolerated than rice** – a gluten-free grain (15)!

The way wheat is prepared may also be important. In one study, sourdough bread (bread made from fermented wheat) did not cause a reaction in celiac patients in the same way as regular bread (16).

Of course, these studies do not suggest that celiac patients should start buying Einkorn wheat or sourdough bread instead. This needs to be studied a lot more before any recommendations can be made. But what these studies DO suggest is that *modern* wheat has a unique ability to trigger an auto-immune reaction in the gut and is probably the main reason why celiac disease and gluten sensitivity are on the rise.

Bottom Line: Modern wheat contains more of the problematic gluteins and there are some studies showing that older wheat varieties don't cause a reaction in celiac patients.

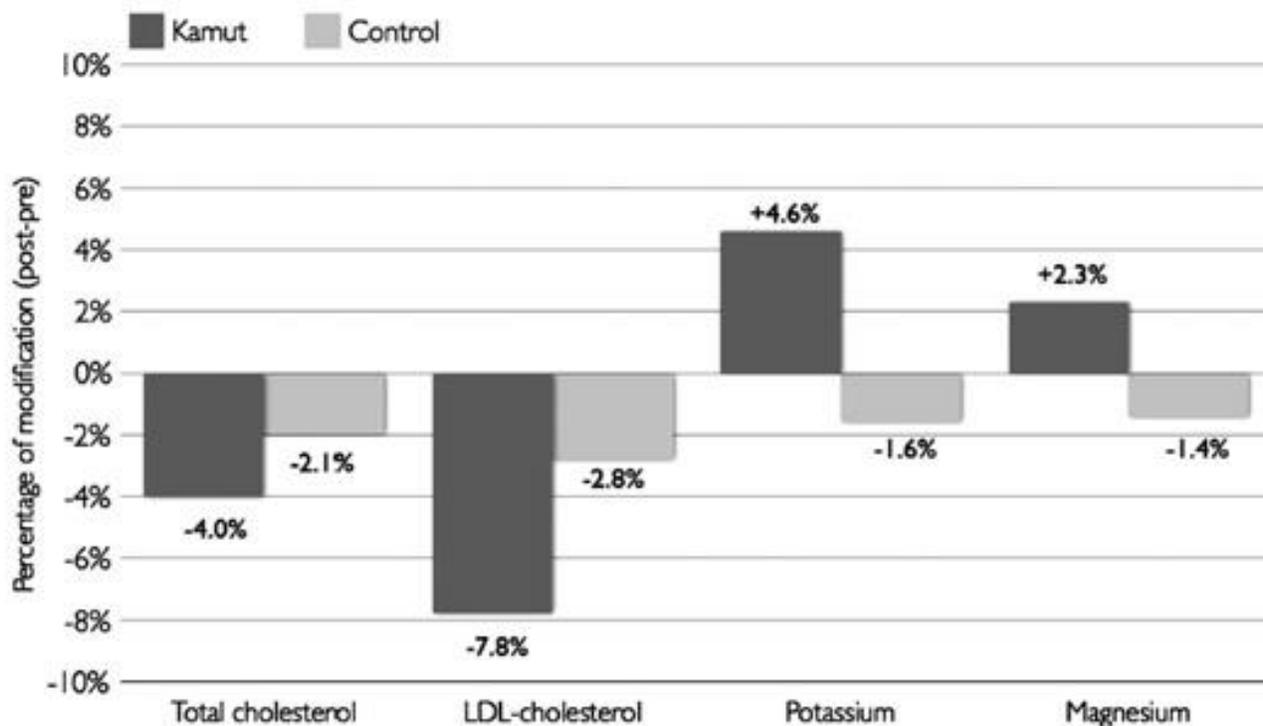
Studies Show That Modern Wheat is More Harmful to Healthy People as Well

Pretty much everyone agrees that wheat can be a problem... for celiac patients.

Awareness and acceptance of non-celiac gluten sensitivity has been increasing as well. But one thing that most skeptics **refuse** to accept is the possibility that wheat can be harmful for other people as well. That is, people who *don't* have celiac disease or gluten sensitivity.

Well... I also found a couple of studies in healthy people. One of them was published in early 2013. This study compared Kamut (an older variety of wheat) against modern wheat. It was a randomized controlled cross-over trial with 22 healthy participants (17). The participants consumed either Kamut or modern wheat, for 8 weeks each.

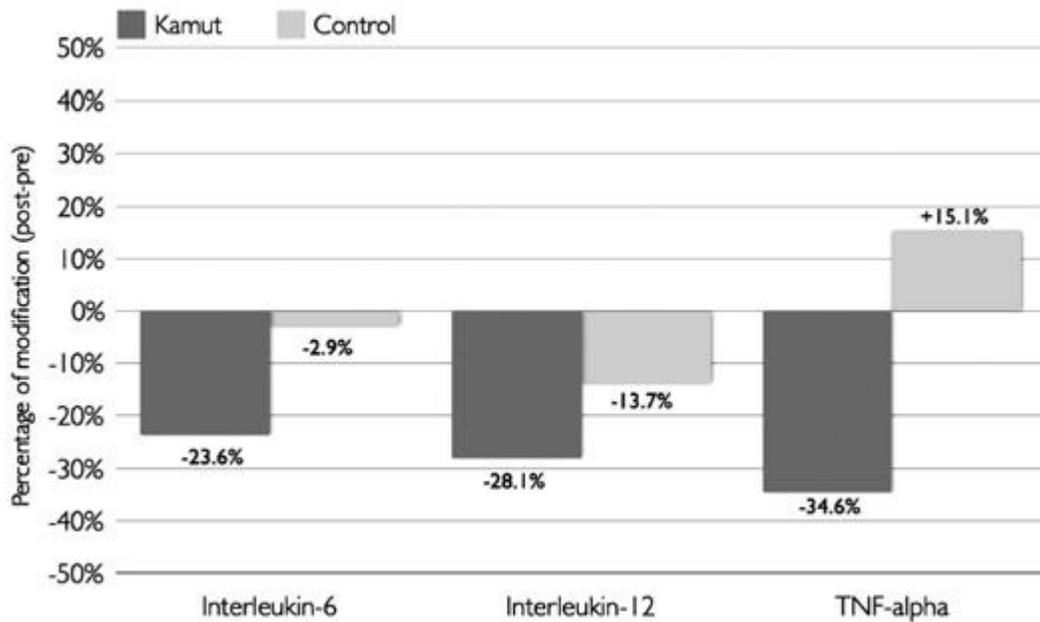
This is what happened to their cholesterol levels and blood mineral content:



As you can see, Kamut wheat caused a reduction in both Total and LDL cholesterol compared to modern wheat. It also increased blood concentrations of potassium and magnesium, while these minerals decreased with the modern wheat.

Kamut also caused a mild reduction in fasting blood sugars (3 mg/dL), but that isn't shown on the graph.

Here is what happened to inflammatory markers. Excess inflammation in the body is linked to almost every modern disease, including heart disease, diabetes, metabolic syndrome, stroke, Alzheimer's, arthritis and many more.



As you can see, Kamut lead to a major decrease in some important inflammatory markers (IL-6, IL-12 and TNF- α), while modern wheat did not. In the case of TNF- α , modern wheat caused an **increase**, although it was not statistically significant. What this study implies is that Kamut wheat is, at the very least, much “less bad” than modern wheat.

There was also another study that tested an old Italian variety of wheat and noticed significant improvement in blood cholesterol and inflammatory markers compared to modern wheat (18).

Bottom Line: Relative to older wheat varieties, modern wheat has adverse effects on cholesterol, blood mineral content and inflammatory markers, potentially contributing to disease.

Is There Such a Thing as Healthy Wheat Bread?

If you can get your hands on whole grain bread made with Einkorn or some of the older varieties of wheat, then perhaps it can be a part of a healthy diet.

Another way is to make it yourself.

You can dig around and find someone who sells whole wheat grains of the old breed, then you can grind and ferment the wheat and bake your own healthy bread.

Or you could just save yourself the trouble and skip the wheat altogether. There's no nutrient in it that you can't get in greater amounts from other foods.

Modern Wheat Should be avoided

Even though wheat may have been healthy in the past, the wheat people are eating today is completely different. It's the same as with many other modern foods... when scientists try to "enhance" what nature has already provided us with, things tend to go wrong.

In the case of wheat, this ancient diet staple was accidentally turned into a modern health nightmare. (Learn more here <http://authoritynutrition.com/6-ways-wheat-can-destroy-your-health/>)

If you care about your health and can't get your hands on the older varieties of wheat, then do yourself a favor and avoid wheat like the plague.

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