The Critical Role of Wheat in Human Disease

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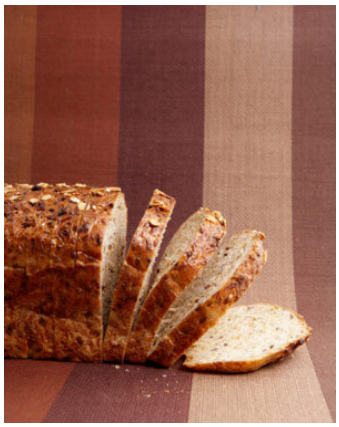

Lectin is a type of 'wheat germ agglutinin' (WGA) and glycoprotein. Through thousands of years of selectively breeding wheat for increasingly larger quantities of protein, the concentration of WGA lectin has increased proportionately.

WGA is largely responsible for many of wheat's pervasive ill effects. What's more, WGA is found in highest concentrations in "whole wheat," including its supposedly superior sprouted form.

What is unique about the WGA glycoprotein is that it can do direct damage to the majority of tissues in your body without requiring a specific set of genetic susceptibilities or immune-mediated articulations.

This may explain why chronic inflammatory and degenerative conditions are endemic to wheat-consuming populations.

WGA lectin is an exceptionally tough adversary as it is formed by the same disulfide bonds that make vulcanized rubber and human hair so strong, flexible and durable.

Like man-made pesticides, lectins are extremely small, resistant to breakdown by living systems, and tend to accumulate and become incorporated into tissues where they interfere with normal biological processes.

At exceedingly small concentrations, WGA stimulates the synthesis of pro-inflammatory chemical messengers. WGA induces thymus atrophy in rats. WGA can pass through the blood-brain barrier. It may also interfere with gene expression and disrupt endocrine function.

Sources:

- GreenMedInfo 2009

Dr Mercola's comments:

I have long been sharing the dangers of eating all types of grains, including even the supposedly healthy whole wheat and sprouted varieties.

Typically, the "danger" is blamed on gluten, a protein most commonly found in wheat, rye and barley. Celiac disease, also more casually referred to as wheat- or gluten intolerance, occurs when your body cannot digest gluten.

The undigested gluten then triggers your immune system to attack the lining of your small intestine, which can cause symptoms like diarrhea or constipation, nausea, and abdominal pain.

Over time, your small intestine becomes increasingly damaged and less able to absorb nutrients such as iron and calcium. This in turn can lead to anemia, osteoporosis and other health problems.

However, this is truly only one problem linked to eating wheat, and may not even be the most serious one. That honor may actually go to wheat lectin.

What is Wheat Lectin?

Lectin is a defense mechanism for the wheat plant, designed to ward of its natural enemies such as fungi and insects. Unfortunately, this protein is also very resistant to breakdown by living systems, and it easily accumulates in tissues where it interferes with normal biological processes and acts as an anti-nutrient.

Typically, sprouting, fermenting or digestion can help to negate some of the harmful effects of such anti-nutrients (as in the case of fermenting soy, which removes many of its anti-nutrient properties). However, lectins are resistant to these types of processes.

For this reason, lectins exist even in "healthy" sprouted breads and may be in their highest concentrations in whole-wheat varieties.

Dr. Del Thiessen explained the dangers very well in the article The Awful Truth About Eating Grains. When you have a few minutes, I suggest reading that article in its entirety.

But to put it in a nutshell, Dr. Thiessen writes:

"Lectins, which are proteins that are widespread in the plant kingdom, are recognized as major anti-nutrients of food. Cereal grain lectins are wheat germ agglutinin (WGA). It can interfere with digestive/absorptive activities and can shift the balance in bacterial flora shown to cause problems with normal gut metabolism. The potential to disrupt human health is high."

The Dangers of Wheat Lectin

What is lectin's potential to disrupt your health, exactly? Here is a sampling of its dangers, which you can read about more in-depth here:

- **Pro-Inflammatory:** WGA lectin stimulates the synthesis of pro-inflammatory chemical messangers, even at very small concentrations.
- **Immunotoxic:** WGA lectin may bind to and activate white blood cells.
- **Neurotoxic:** WGA lectin can pass through your blood-brain barrier and may attach to the protective coating on your nerves known as the myelin sheath. It is also capable of inhibiting nerve growth factor, which is important for the growth, maintenance, and survival of certain target neurons.
- **Cytotoxic (Toxic to cells):** WGA lectin may induce programmed cell death.

Further, research shows WGA lectin may even:

- Interfere with gene expression
- Disrupt endocrine function
- Adversely affect gastrointestinal function
- Share similarities with certain viruses

WGA lectin is capable of passing through cell membranes of your intestines, gaining entry into your body. Further, if your mucosal barrier is compromised, for instance from taking certain drugs like aspirin and ibuprofen or due to a viral or bacterial infection, lectin may become even more problematic.

Keep in mind that lectin is not only in wheat. All seeds of the grass family (rice, wheat, spelt, rye, etc.) have high levels of lectin.

Wheat Gluten Can Also Damage Your Health

As I mentioned earlier, celiac disease occurs when your body cannot digest the gluten found in wheat (gluten is also found in rye, barley, oats and spelt).

According to statistics from the University of Chicago Celiac Disease Center, an average of one out of every 133 otherwise healthy people in the United States suffers from this digestive disease.

Previous studies have found that this number may be as high as 1 in 33 in at-risk populations.

"Gluten" comes from the Latin word for glue, and its adhesive properties hold bread and cake together. But those same properties interfere with the breakdown and absorption of nutrients, including the nutrients from other foods in the same meal.

The result is a glued-together constipating lump in your gut rather than a nutritious, easily digested meal.

The undigested gluten then triggers your immune system to attack the lining of your small intestine, which can cause symptoms like diarrhea or constipation, nausea, and abdominal pain.

Over time, your small intestine becomes increasingly damaged and less able to absorb nutrients such as iron and calcium. This in turn can lead to anemia, osteoporosis and other health problems.

The rapid increase in celiac disease and milder forms of gluten intolerance is no surprise considering the modern Western diet, which consists in large part of grain carbohydrates.

Additionally, modern wheat is very different from the wheat your ancestors ate. The proportion of gluten protein in wheat has increased enormously as a result of hybridization.

Until the 19th century, wheat was also usually mixed with other grains, beans and nuts; pure wheat flour has been milled into refined white flour only during the last 200 years.

The resulting high-gluten, refined grain diet most of you have eaten since infancy was simply not part of the diet of previous generations.

Further complicating matters is that celiac disease often goes undetected for years because symptoms are not always present. And because celiac disease has been considered rare in this country until recently, it often goes undiagnosed or is misdiagnosed as irritable bowel syndrome or lactose intolerance.

If you do have celiac disease -- a blood test can let you know for sure -- it is imperative that you do not eat gluten in order to avoid further damage to your health.

Please be aware that gluten can be hidden in many foods including soups, soy sauce, candies, cold cuts, and various low- and no-fat products so you will need to be sure to check the labels before you eat it. Also watch out for malt, starches, hydrolyzed vegetable protein (HVP), texturized vegetable protein (TVP) and natural flavoring. Some pharmaceuticals, vinegars and alcohol can also contain gluten.

Should You Give up Grains?

In my experience, about 75-80 percent of ALL people benefit from avoiding grains, even whole sprouted grains. This is true whether you have gluten intolerance or not. This is because, in addition to the problems with anti-nutrients like lectin and proteins like gluten, grains rapidly break down to sugar in your body, which causes elevations in insulin which exacerbate health problems such as:

- Overweight
- High cholesterol

- High blood pressure
- Type 2 diabetes
- Cancer

The only consistent exceptions would be those whose nutritional type is a carb type and you don't suffer symptoms of intolerance.

If you're looking for a healthy alternative to wheat flour to use in your cooking, try coconut flour instead and also check out these wheat-free baking tips.

Related Links:

- The Awful Truth About Eating Grains
- More Reasons to Avoid Wheat
- Why is Wheat Gluten Disorder on the Rise?