



Story at-a-glance

- Wheat and other glutinous grains are probably the worst starches to consume, in terms of metabolic impact versus micronutrient benefit, and many are heavy in toxins
- Most people will need some starchy carbohydrates for optimal health; the optimal amount appears to be about 20 to 30 percent of your total caloric intake, or approximately 200 calories per day for the average person
- The most important consideration is that your carbohydrate sources are as organic and unprocessed as possible, free of pesticides and chemical additives, and not genetically modified
- Studies now demonstrate that your child's diet has a direct impact on his or her cognitive function, and that both quality and quantity of carbohydrates are important

Grains should represent a small part of your diet, regardless of your age. I personally seek to avoid most grains, except rice.

But if you're going to eat some grain-based foods, how much is too much?

This debate heated up earlier this year when two nutritional experts, Dr. Paul Jaminet and Dr. Ron Rosedale, [engaged in a debate over how many starches are too many](#).

Dr. Rosedale believes there is no such thing as a "safe starch" and that all starchy carbohydrates should be avoided, which of course includes all grains.

Dr. Jaminet, on the other hand, is a little more forgiving of some of the "safer starches," such as potatoes and rice. He believes some people need a small amount of these in their diets.

This is an interesting debate.

It's well thought out and well articulated, but quite lengthy.

If you have time, I do recommended your reading through all of it to see the nuances of their contrasting views.

Controversial Carbs

The amount of carbohydrates one should consume for optimal health is a widely controversial topic. Fortunately we can gain some insights as to how much we might need by examining a child's diet, which is critically important for proper brain development. As you would expect, the quality of a child's diet will directly affect his or her cognitive functioning. Two recent studies highlight just how important this is.

STUDY #1: In the first study, Japanese researchers analyzed the relationship between breakfast staples and intelligence in children. They divided 290 healthy children into three groups according to their breakfast staple—rice, bread, or both. What they found was that children in the rice group had significantly more gray matter in their brains and showed a higher perceptual organization index, which is a component of intelligence. This supports the theory that children's breakfast choices affect their cognitive function.

According to the study:

"... [O]ne possible mechanism underlying the difference between the bread and the rice groups may be the difference in the glycemic index (GI) of these two substances; foods with a low GI are associated with less blood-glucose fluctuation than are those with a high GI."

STUDY #2: A 2011 cross-sectional study in Tehran, Iran, examined the relationship between long-term refined carbohydrate intake and non-verbal intelligence among 6 to 7-year-old schoolchildren. Researchers found that refined carbohydrate consumption and non-verbal IQ were inversely related for these Tehrani children. In other words, the more refined carbs the children were eating, the lower their non-verbal IQs. So how much starch is too much starch for breakfast—or any other meal, for that matter?

Avoid Carbs that are Loaded with Toxins

Aside from providing excessive calories as carbohydrates, one of the major adverse consequences of most grains is that they are loaded with toxins. In fact, as you'll learn in the interview above, the average person gets about 1.5 grams of natural food toxins daily, which makes up more than 99.9 percent of all the toxins ingested. These are toxins *made by plants*, as opposed to manmade toxins, which serve to protect the plant from being eaten by mammals.

The one grain type that is virtually toxin free is white rice, which has far fewer toxins than brown rice. The vast majority of toxins in white rice are destroyed by cooking, which is why white rice is the only grain Dr. Jaminet recommends. One of the grain toxins with which you may be familiar is gluten.

"Gluten" comes from the Latin word for glue, so named because its adhesive properties hold bread and other baked goods together. Gluten is present in grains such as wheat, rye, and barley. The glue-like properties interfere with the breakdown and absorption of nutrients, including the nutrients from other foods in the same meal. The result is a sticky, constipating lump in your gut, rather than a nutritious, easily digested meal. This undigested glutinous gut-bomb may trigger your immune system to attack the lining of your small intestine, causing diarrhea or constipation, nausea, and/or abdominal pain. Severe reactions are classified as "celiac disease," and milder reactions fall under the category of "gluten intolerance." Over time, your small intestine can become 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. Modern wheat (and other grains) differs greatly from the wheat our ancestors ate. The proportion of gluten protein in wheat has increased enormously as a result of hybridization. Legumes are also loaded with lectins, which is why most who follow a Paleo type diet avoid them.

Wheat Lectin (WGA) is Cytotoxic, Neurotoxic, Cardiotoxic and Immunotoxic

Wheat lectin, or "wheat germ agglutinin" (WGA), is largely responsible for many of wheat's pervasive ill effects. WGA is highest in whole wheat, especially *sprouted* whole wheat, but wheat isn't the only grain with significant lectin. All seeds of the grass family (rice, wheat, spelt, rye, etc.) are high in lectins. WGA has the potential to damage your health by the following mechanisms (list is not all-inclusive):

- **Pro-Inflammatory:** WGA lectin stimulates the synthesis of pro-inflammatory chemical messengers, 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 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 neurons

- **Cardiotoxic:** WGA lectin induces platelet aggregation and has a potent disruptive effect on tissue regeneration and removal of neutrophils from your blood vessels

- **Cytotoxic (Toxic to cells):** WGA lectin may induce programmed cell death (apoptosis)

Research also shows that WGA may disrupt endocrine and gastrointestinal function, interfere with genetic expression, and share similarities with certain viruses.

The following foods contain chitin-binding lectins, which are very similar to wheat lectin:

- Barley
- Rye
- Tomato

Chitins are the primary binding target of wheat lectin; therefore, wheat lectin and chitin-binding lectin are functionally identical. This could be important information if you are struggling with celiac disease or other gastrointestinal issues