

Grains

By Paul Chek

The story of grains is part and parcel with the story of bread, neither of which the human machinery is designed to function optimally on. While I'm sure this comment is a surprise to some of you, significant amounts of scientific evidence suggests that for all of human evolution, right up until approximately 10,000 years ago, the primary staple in the diets of most civilizations was animal meat. There were times when meat was scarce for a variety of reasons, yet in general, our consumption of fruits, vegetables, nuts and seeds was seasonal and supplementary. Most of the animals we preferred to eat, such as deer, were plant eaters. These animals served to condense nutrition in their meats, one pound of meat containing the nutritional equivalent of several pounds of vegetables. Such a dense nutrient source allowed us to have a sustaining food source during the winter months during the period in which we had minimal food storage methods other than the cold itself. Although many argue (mostly from an emotional bias) that we must have carbohydrate sources to function, current biochemistry reveals that we do have the capacity to convert some fat molecules (glycerol) into carbohydrate (Exercise Physiology, by McArdle, Katch and Katch).

While there are many controversial theories as to why we began farming, it is more commonly agreed upon that we began farming practices, or nurturing the growth of specific plant species and domesticating animals, no longer 20,000 years ago and more likely as recently as 10,000 years ago (The Quest For Food, by Crowe). During this time, there has been a progressive increase in the consumption of grains and grain-based products, yet this period is but a flash in the scope of human evolution, during which our digestive machinery was formed.

Before the advent of factory farming, grain was partially germinated (sprouted). This resulted from being sheaved and stacked in fields, which stood for several more weeks before threshing. During this period, the grain seeds were exposed to rain and dew which soaked into the sheaves. The grain could pick up this moisture and, with heat from the sun, conditions were ideal for favoring a degree of germination and enzyme multiplication in the grain (Nourishing Traditions, Fallon).

The process of sprouting not only produces vitamin C, it changes the composition of the grain in numerous ways that make it more beneficial as a food. For example, sprouting increases the content of such vitamins B, B2, B5 and B6. Carotene, which is converted to vitamin A, increases dramatically – sometimes eight-fold. Even more important in today's climate of indigestion, is that phytic acid, which is a known mineral blocker, is broken down in the sprouting process. Phytic acid is present in the bran of all grains, and the coating of nuts and seeds, and inhibits the absorption of calcium, magnesium, iron, copper and zinc. These inhibitors can neutralize our own digestive enzymes, resulting in the digestive disorders experienced by many people who eat unsprouted grains; there are many scientific indicators linking grain consumption to rheumatic and arthritic conditions as well ("Cereal Grains – Humanity's Double Edged Sword," by Loren Cordain). Complex sugars responsible for intestinal gas are broken down during sprouting and a portion of the starch in grain is transformed into sugar. Sprouting also inactivates aflatoxins, which are toxins produced by fungus and are potent carcinogens found in grains.

By purchasing your own organic whole grains and sprouting them before making your own breads or cereals, you can save yourself from the unwanted effects of phytic acid. You can also buy sprouted breads in many health food stores. Phytic acid, as I mentioned above, is also present in the coatings of seeds and nuts. As I am sure you are aware, many health and nutrition experts advocate the consumption of nuts and seeds and they are prevalent in many health food bars. Unfortunately, eating nuts and seeds without soaking them for at least 8-12 hours to break down the phytic acid can produce the same enzyme and mineral blocking effects that eating unsprouted grains can, which is one of the reasons many of my patients find great relief when removing grains from their diet, particularly those containing gluten.

As is the norm when studying scientific or lay literature on any topic, there is always opposition among experts – and so it is in the case of phytic acid (phytates) and the potential problems it can cause. Some experts claim that cooking and processing, as in the making of bread, breaks phytic acid down, nullifying its effects on those consuming processed grain products. While my clinical observations suggest the opposite, some interesting test results with regard to zinc deficiency support my contention that merely milling grains into flour and baking it may not break down phytates.

In 1964, it was found that boys in Iran and Egypt had severely underdeveloped testicles. Tests showed that they had extreme zinc deficiency, yet zinc was plentiful and widely consumed in those countries. It was discovered that zinc was bound by phytates in the bread they ate, and while the bread contained a great deal of zinc, it was useless because it was locked up (“Trace Minerals” by E. DiCyan, Ph.D) This important finding will become even more important in understanding the potential downfalls that come with over-consumption of processed grains as presented below.

While there is little argument that whole-grain cereals and breads are more nutritious, provide more fiber and aid detoxification, care must be taken to avoid consuming ill-prepared or processed grains. As you are surely well aware, we have not only deviated far from our ancestral dietary, but we in the era of highly processed foods. Food manufacturers have clung to public misperceptions with regard to white foods, particularly white breads, white rice, white sugar and white table salt, all of which are commonly referred to as white death by most nutrition experts and naturopathic physicians, and for good reason!

White flour became popular some time prior to 1872, at which time the roller mill began to replace the stone mills of old. White flour, known to be better for making pastries and baking in general, was only available to the rich prior to advent of the roller mill because its production required significant manual labor, which only the rich could afford. Stone mills have no mechanism to remove the germ from the flour, so the flour had to be sifted through silk filters over and over again until it finally reached a cream color, about that of milk. This labor-intensive process resulted in white flour, then a product perceived as one of royalty. The inability to afford white flour resulted in it being sought after by the poor, much the same as the chair was sought after by Egyptian peasants prior to their common use, as the chair was only used by royalty at one time.

While the poor had developed a taste for white flour and a desire for the sense of stature they must have felt it afforded them, they were nonetheless developing an attraction to a nutritionally deficient food source. With the advent of the roller mill, the baker was able to produce white bread at a cost most anyone could afford, all the while the nutritious portions, the bran and germ of the grain were generally fed to pigs and other farm animals! Not long after white flour was accessible to all classes, cereals began to suffer the same fate, losing their nutritional value due to processing. Today, the nutritious portions of the grain are sold off to health food stores and supplement manufacturers, so in effect, many of you pay for the same grain two or three times in the form of flour, fiber to combat constipation and finally vitamin supplements such as vitamin E from wheat germ.

While there are a number of nutritional deficiencies in white flour when compared to its stone ground counterpart, I would like to share a few of the less technical ones with you here:

- * Zinc, which naturally occurs in the outer portions of the grain is milled away in the production of white flour. This disrupts the natural ratio of zinc to cadmium so that the zinc cadmium ratio is reversed. Any cause of a zinc shortage in the body is a cause for concern because this very important mineral is a catalyst to numerous enzymatic and hormonal functions, not to mention being essential to protein synthesis and reproduction; the importance of which will become evident below.

- * White flour contains only 13% of the chromium, 9% of the manganese and 19% of the iron that is contained in whole wheat. Due to the fact that many of the B vitamins are concentrated in the outer parts of the grain, white flour is deficient in B vitamins (“Nutrition, A Holistic Approach” by Ballentine).

- * White flour does not contain the germ of the wheat, which is a potent source of vitamin E, resulting in a high potential for vitamin E deficiency in those whose diet is inadequate for vitamin E sources and/or comparatively high in bread-stuffs (“Thoughts On Feeding” by L.J. Picton).

- * Research shows that since as long ago as the 1950’s, conventionally farmed American grains have been low in protein quality and quantity. So much so, in fact, that whenever the US tried to give its surplus grains away to countries with starving populations, they would not accept US grains if any other country was offering theirs. They had found that the deficient US grains did little to maintain or improve the health of the starving (“E. Pfeiffer, Himself” audio lectures).

Here we are, after 130 years of consuming highly-processed grains in the form of breads, pastries and cereals, and chronic disease states are rampant among most industrialized nations, with the greatest prevalence in England, which has the greatest consumption of white flour, white sugar and tea per capita. The US running a strong second! Not surprisingly, we appear to be continuing another trend that began with the introduction of the steel roller mill – a declining birth-rate. The more bran and germ millers extracted from flour, the lower the birth rate per 1000 people there were in England between 1872 and 1945. Today, things are not much better. Artificial insemination is a big business, and if not for advanced medical technologies, we would be losing a huge amount of babies that wouldn’t have survived even 100 years ago. Additionally, there are significant reductions in sperm counts among males, which may well be the result of both over-consumption of highly processed foods and toxicity in our food supply and our eco-system.

According to a recent analysis by University of Missouri epidemiologist Shanna Swan (121. Organics Book), the average sperm count of men in the United States and Europe has plummeted by more than 50% since the late 1930s. This finding fuels ongoing concerns that male reproductive health may be deteriorating. Based on 61 studies published since 1938, involving a total of nearly 15,000 subjects, Swan found that average sperm counts among healthy American men have dropped from 120 million sperm per milliliter (million/ml) of semen in 1938 to just over 50 million/ml in 1988, a decline of 1.5% per year. In Europe, sperm counts have fallen to roughly the same level, though twice as fast, at 3.1% each year between 1971 and 1990. While environmental chemical exposure is suspected, there is a very real possibility that malnutrition secondary to consuming too many processed foods is a possible cause. Francis Marion Pottenger, Jr., MD, demonstrated with his cat studies that feeding cats processed foods led to numerous disease processes, infertility and eventually extinction!

Over the past 18 years that I have been consulting people with physical and dietary complications and challenges, I have seen a distinct pattern – the over-consumption of processed carbohydrates! Most people get their dietary education from watching TV commercials and reading magazines. These are the two worst places in the world to acquire nutritional information because this is exactly where big industry plants its hooks for you. Another problem was the boom in running and triathlons, which resulted in the production of numerous popular books on how to eat for success in these sports. The diet plans in these books commonly resemble the USDA Food Pyramid, which is commonly referred to as the USDA Feedlot Pyramid by nutritional experts such as Dr. Barry Sears, author of The Zone Diet, because such dietary proportions are far better suited to fattening both animals and people than they are to health and vitality! Unfortunately, the USDA food pyramid is used as a guideline by most school cafeterias preparing food for your children!

An additional problem that has come part and parcel with increased mechanization of food processing and the desire to increase shelf life of foods has been the addition of sugar to what was originally a potentially good food – natural unprocessed cereal grains. Consider that when ground to the particle size used to make white flour, the flour covers 10,000 times the surface area of the grain itself. The result is that when you eat a processed food product like white bread, cookies, donuts or classic boxed cereals, you are eating a high starch (high sugar) food that will be absorbed at almost the same rate as straight table sugar! While considering that, review these statistics from the recently published book Crazy Makers, by Carol Simontacchi, who compares the sugar content of 1 ounce of Pepsi (1.2 teaspoons) to common breakfast cereals:

- * Lucky Charms = 2.8 teaspoons per oz.
- * Froot Loops = 3.3 teaspoons per oz.
- * Cinnamon and Spice flavored Quaker Instant Oatmeal = 4.3 teaspoons per oz.!

Additionally, in his book Beating the Food Giants, Paul Stitt shows us that the average breakfast cereal today ranges between 46% and 53% sugar! With this knowledge, watch to see how much sugar people add to their cereals before eating them and how much soda pop is consumed in concert with many of these non-foods!

We have an epidemic on our hands with insulin insensitivity (Syndrome X), adult onset diabetes and obesity! We have children consuming massive quantities of sugar and food additives, most of which, like sugar, are stimulants. White flour is literally a sugar in itself, and where it is mixed with fats in processed foods, the fats are commonly hydrogenated and rancid, increasing your susceptibility to a number of disease processes! If you want to flatten your abs “forever!” I suggest the following CHEK Points:

1. Before entertaining grain foods, always exclude all grains except corn, rice, buckwheat and millet for two weeks. If you feel a noticeable improvement in your health and well-being, you are probably gluten intolerant. When you start eating grain foods again after two weeks off, start slowly and eat only one grain food to minimize the possibility of a potentially uncomfortable reaction by the body. Diarrhea and stomach pain is common among those that are gluten intolerant!

2. MINIMIZE all consumption of commercial, processed grains and grain-based products.

3. If you plan to eat any grains at all, restrict yourself to organic, unprocessed corn, rice, buckwheat or millet, rotating them on a four-day cycle. Eat them only after they have been presoaked for at least 12 hours to break down the phytic acid. After two weeks on this regimen, introduce one of any other grain to see if you have any adverse reactions. If you do, chances are good that you are gluten intolerant and should have a blood test done to confirm all food allergies and intolerances (see resource directory for test options).

4. If you enjoy grain-based breakfast cereals, purchase only whole organic grains, soak or sprout and make your own breakfast cereals. There are a few companies that make reasonable boxed breakfast cereals, although my suggestion is to stay away from any processed, cooked grain products whatsoever!

5. If you enjoy bread, buy only sprouted whole-grain breads that contain no additives or preservatives. Use the above cereal guidelines to choose your breads and determine if you are gluten intolerant.

6. Avoid any conventionally prepared pasta. Purchase only organic rice pasta or gluten free pasta if you are gluten intolerant. Pasta is considered to be one of the foods most heavily laden with pesticide residues!

7. Apply the soaking principle to all seeds and nuts. Pour the water off the nuts and replace it each day. Keep refrigerated while storing once soaked.

8. Never eat more grain-based foods than ideal for your metabolic type with regard to how much carbohydrate you should be eating.

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