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WHOLE grains and PROCESSED grains

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WHOLE grains (before using them to make flour) can be OK and contain protein, carbohydrates, fiber minerals and vitamins. These vitamins and minerals and carbs and fiber and protein are also in other foods, so grains are not essential and we can get carbohydrates from other vegetables and fruits. The effects of WHOLE grains on the body depends on the medical status of the individual and how sugar in the diet affects their condition(s). Grains are changed to sugar more rapidly compared to fats and proteins so after grains are eaten, the sugars are absorbed more rapidly into the body resulting in a higher insulin spike after eating. The insulin spike causes faster body cell uptake of sugar which then results in a rapid lowering of the blood sugar level. Then the brain cells (which require a tremendous amount of sugar) need more sugar so neurotransmitters from the brain start a cascade of glandular stimulation which tells the adrenal glands to produce corticosteroids which make the body break down stored fats and glycogen to increase blood sugar levels again. Unfortunately, corticosteroids (even endogenous ones) have multiple downside effects on the body. One of these is that steroids prevent body cells from taking in sugar from the blood. When this repeatedly occurs, the body cells become insulin resistant and the pancreatic insulin-secreting cells become exhausted trying to produce more insulin to try to make the insulin-resistant cells absorb sugar again. An exhausted pancreas cannot produce insulin which results in diabetes Type II. The condition of insulin resistance is also part of what is currently called the Metabolic Syndrome which is characterized by insulin resistance, central obesity (excessive fat tissue in and around the abdomen), atherogenic dyslipidemia (high triglycerides and low HDL cholesterol - this combination fosters plaque buildup in artery walls), prothrombic state (high fibrinogen or plasminogen activator inhibitor in the blood), high blood pressure, and a proinflammatory state (elevated high-sensitivity C-reactive protein in the blood). So along with diabetes Type II, the Metabolic Syndrome creates a higher risk for coronary heart disease.

Another problem occurs with excess insulin secretion in response to the high and then low blood sugar levels. The adrenal steroids which are turned on, cause the body to change fat and protein into sugar. At the same time, the body-building steroids of the adrenals are turned off so muscle mass is lost.

There are other medical conditions which result from grain consumption. Gluten is a protein grain to which up to 60% of Americans react and develop many different symptoms. Gluten is found in wheat, barley, rye, durum, emmer, kamut, semolina, bulghur, einkorn, faro, and spelt. Oats are often contaminated with gluten from other grains so be sure and get only packages that state "gluten-free"). Gluten-sensitive individuals have an inflamed intestinal lining within 30 minutes after eating grain with gluten. The body secretes cortisol (a steroid) into the intestine to stop the inflammatory response. The cortisol also goes to the brain and stimulates the production of "feel-good" chemicals which contribute to the addiction to consuming grain products. You can Google: gluten.org

By the time WHOLE grains are packaged for sale there have been 6-10 applications of chemicals (pesticides, herbicides and fungicides). Organic WHOLE grain has received only one fungicide application in the granary per U.S. FDA regulation. So best to buy ORGANIC WHOLE grain if you choose to eat grain.

All grains contain phytic acid in the outer layer or bran. Untreated phytic acid can combine with calcium, magnesium, copper, iron and especially zinc in the intestinal tract and block their absorption. This is why a diet high in unfermented whole grains may lead to serious mineral deficiencies and bone loss over time. Soaking allows enzymes, lactobacilli and other helpful organisms to break down and neutralize phytic acid. As little as seven hours of soaking grain in warm acidulated water will neutralize a large portion of phytic acid. The simple practice of soaking cracked or rolled cereal grains overnight will vastly improve their nutritional benefits. Soaking in warm water also neutralizes enzyme inhibitors, present in all seeds, and encourages the production of numerous beneficial enzymes. The action of these enzymes also increases the amounts of many vitamins, especially B vitamins, available to us. An excellent book to read on this subject is Nourishing Traditions by Sally Fallon (877-707-1776; ISBN 0-9670897-3-5).

The letters in “WHOLE” are capitalized because PROCESSED grains have other effects on the body in addition to the rush of sugar into the blood after eating them.

Chlorine gas is usually used to bleach flour. This converts xanthine (a purine in the grain) to alloxan. For many years alloxan has been used by researchers to cause diabetes in mice and rats to study this disease. Alloxan is specifically taken up by the beta cells in the Islets of Langerhans of the pancreas where it causes free radical damage to the DNA of these cells and they die. The beta cells of the pancreas are the cells responsible for producing insulin. You can see why they use this chemical to create diabetes in laboratory animals for study. We are eating alloxan in the processed flour that is used to make most of the processed food products on the grocery shelves (pastas, desserts, cereals, breads, etc). The diets in the United States have been largely processed grain-based for the past 40 years. The incidence of diabetes in this country has gradually increased to equal or surpass cardiac disease and cancer. Commercially processed grain contributes to this growing problem.

There are many websites which you can quickly reach if you google: alloxan

Minerals are depleting in our soils (and across the world) unless the farm is farmed organically or minerals are replaced. The levels of nutrients have dropped between 30 and 50% over the past 30 years in our crops. The USDA annually publishes reports of nutrient contents of foods grown in the U.S. which are available on line. During the processing of grain, many of these remaining vitamins and minerals are lost (40% chromium lost, 86% manganese, 89% cobalt, 78% zinc, 48% molybdenum, to name a few, and most of the B vitamins are lost). B vitamins are critical for cardiac function as well as many essential cellular functions. Iodine was added to the first white flours in America because we recognized the iodine deficiency of our soils. However, in the 1960's, bromine was substituted for iodine and bromine is toxic to the body. There is no nutritional reason to eat processed grain. Enriched grain may cause cadmium toxicity because a balance of minerals is not achieved with “enrichment”. Zinc is necessary to prevent body absorption of toxic cadmium. Zinc is concentrated in the germ and bran of the grain. When grain is processed, the bran and germ are removed so the zinc concentration is then too low in the remaining part of the grain to prevent the absorption of the cadmium. During sugar refining, zinc is also removed resulting in increased cadmium absorption every time we eat sugar. You can Google: beatrice trum hunter cadmium flour toxic and click on the Whole Foods Primer.

Once a kernel of grain is cracked or rolled or processed somehow and now exposed to the air, oxidation of the oil in the grain begins to occur. Oxidation of the oil causes the formation of toxic free radicals. When we eat grains with their oxidized oils, we absorb these free radicals which cause cell death

anywhere they go in the body. Certainly our liver tries to remove these before they can affect the body's cells elsewhere, but it is a constant stress on the liver. If the liver has other problems, then its detoxification reserves can become depleted and toxins such as these free radicals and alloxan begin to get into our bloodstream and contribute to immune problems and chronic disease.

Just an aside, once a bottle of any oil is opened and exposed to air, oxidation begins and free radicals are created so the bottle should be refrigerated and used up within 2 weeks to reduce the free radicals we ingest. Purchasing oil that is bottled in green or dark brown glass bottles is better because light causes some oxidation as well and more light gets through clear glass.

Again, there are many websites that you can find by Googling : food oil oxidation free radicals

Processed grain no longer has fiber. Fiber is necessary for proper intestinal motility and binds some toxins to prevent their absorption and promote their excretion in the stool. When we eat a high load of PROCESSED grain food without fiber (ie. pasta, bread, etc) the intestinal motility is slowed in the colon and toxins are free and there is more time for the toxins to be absorbed into the body and we get more constipated. Fiber in whole grain also binds with the sugars of the grain to slow their digestion and absorption so there is a lowered spike in the blood sugar level.+ So there is less insulin required after whole grain is eaten compared to the spike in insulin level that occurs after a snack or meal containing processed grain. Therefore, there is less roller-coastering of the blood sugar level after whole grain is consumed compared to eating processed grain products.

Whole grain contains an important B vitamin called inositol. Inositol is essential for the body to metabolize fats and cholesterol. When grain is processed, inositol is destroyed.

Bleaching of flour leaves a nitrate residue in the flour. Nitrates and nitrites are converted to nitrosamines in the digestive tract which may cause cancer.

Sources:

An excellent summary article to read is " Grains: Are They Really a Health Food? – Adverse Effects of Gluten Grains" by Nora T. Gedgaudas in Well Being Journal (May/June 2012 , pp. 3-18).

There is a small paperback book entitled, Going Back to the Basics of Human Health by Mary Frost (619-276-2550; ISBN 978-0-9795038-0-1) which is a great easy-to-read overview of these subjects. There is also a good book entitled, Life Without Bread by Christian Allan and Wolfgang Lutz (ISBN 0-658-00170-1). Empty Harvest by Bernard Jensen and Mark Anderson (Amazon.com)and The Real Truth About Vitamins and Antioxidants by Judith DeCava (ISBN 0-9645709-8-X) contain in-depth explanations about what happens during the commercial processing of grain for the making of breads, pastas, etc. Feed Your Kids Well by Fred Pescatore takes a look at different food myths and truths (ISBN 0-471-24855-X).