



# ALIVE!

## TO STRENGTHEN MAN'S HEART

**REPORTEDLY THERE ARE 195,000** species of plants which produce edible parts that could be consumed by humans. How many of those 195,000 species do we consume? Approximately 17 plant species provide 90 percent of our food supply. Grains constitute the largest percentage among that group. Wheat, maize, rice, and barley are the first four on a list of the world's top 30 food crops. Eight grains—wheat, maize, rice, barley, sorghum, oats, rye, and millet—provide 56 percent of the food and 50 percent of the protein consumed on planet Earth.

Despite the fact that humanity relies heavily on grains as dietary staples (and has done so for millennia), there is a trending idea that grains are not good for you. Daily I am confronted with the impact of the grains-are-bad philosophy. "I love bread" is expressed as a guilty confession rather than an expression of enjoyment.

There are a variety of reasons given for the avoidance of grains in the diet. Grains are a carbohydrate and therefore seen as a sugar producer. They are perceived as promoting inflammation, disease, and obesity. They also contain anti-nutrients and are therefore seen as innutritious.

It is also true that perhaps some forms of the grains we consume in the twenty-first century would be unrecognizable

when compared with those used centuries ago. Consider Cheerios + Ancient Grains™, for example. The oats, spelt, KAMUT wheat, and quinoa are in a vastly different form than of yesteryear. In addition to appearance however, grains have been tampered with, some more than others. From the refining of grain to genetic modification to the impact of pesticide and herbicide residue, our grain culture has changed.

Despite the change, research consistently shows that consumption of whole grains is associated with decreased risk of chronic disease and weight gain. Specifically, "diets high in whole grains are associated with a 20-30% reduction in risk of developing type-2 diabetes."<sup>1</sup> Consuming three to five servings a day of whole grains, as opposed to rarely eating whole grains, has the potential to lower the risk of type 2 diabetes by 26 percent and cardiovascular disease by 21 percent.<sup>2</sup> Eating whole grains has been found to lower total and LDL cholesterol levels, triglycerides, and insulin levels. "In the Harvard-based Nurses' Health Study, women who ate 2 to 3 servings of whole-grain products each day were 30 percent less likely to have a heart attack or die from heart disease over a 10-year period than women who ate less than 1 serving per week."<sup>3</sup>

Whole grains are typically not recognized for their phytochemical (extremely beneficial plant chemicals) content. Nonetheless, they are a rich supply. There are a variety of phytochemicals found in whole grains which provide a powerful offensive front to toxic substances that we are exposed to and are produced inside of us. The

antioxidant activity found in whole grains has the potential to protect our blood vessels by thwarting the oxidation of LDL cholesterol and thus impeding atherosclerosis. They can halt rogue molecules from damaging cell membranes and inner structures, preventing cancer development. Typically, blueberries or kale are thought to contain phytochemicals and thus be powerhouses of antioxidant ability. But we have underestimated the tremendous contribution of whole grains in the same arena. Additionally, some of the phytochemicals in grains are unique to them and compliment those found in other foods, such as fruits and vegetables. And in what part of the grain are the phytochemicals found specifically? In the bran and germ, the parts that are removed in the refining process.

Additionally, some of the phytochemicals in grains are unique to them and compliment those found in other foods. . . .

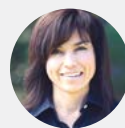
Grains have been viewed with skeptical eyes partially because they contain anti-nutrients, such as phytates, to which minerals and phytochemicals are bound. If these nutrients remain bound to phytates within our digestive tract, they are not available for absorption. Phytase is an enzyme that dismembers phytates. As phytates are broken down, the beneficial compounds bound to them are released. Interestingly, those who consistently consume a significant amount of whole grains have higher phytase concentrations. Specific strains of bacteria living in the large intestine produce phytase and it just so happens that the more whole grains we consume the greater the population of these bacteria in the gut. In essence, those who consume phytates have more phytate-degrading bacteria in their guts. Therefore, they potentially benefit the most from the phytochemicals contained in whole grains. A study was conducted comparing the ability of conventional (meat-eating) adults to degrade phytates with that of vegetarian adults. It was "the vegetarians' microbiota that particularly degraded up to 100% phytate."<sup>4</sup> When whole grains have been removed from the diet, it results in the alkalinizing of the stool. This alteration in pH suggests decreased production of beneficial fatty acids, as a result of lower microbial diversity. Both of these issues affect overall health and gut health.

Another common concern about grain consumption relates to inflammation. Apparently, there seems to be some difference between how whole grains impact inflammatory markers compared with refined grains. In one study, as whole grain intake increased, two inflammatory markers decreased, independent of lifestyle and other dietary variables. This decrease was not observed with refined grains. Rather, low whole grain intake is associated with increased inflammation.

It would be wise to eat whole grains while, at the same time, being mindful of how that grain is grown, fertilized, harvested, processed, and incorporated into the diet. The use of chemicals, such as herbicides, on grains has impacted the nature of grain. Sprouted breads can be easier for those with wheat sensitivities to digest, as they contain glutenases, which are enzymes that aid in the digestion of gluten.

The Bible says, "He [God] causes the grass to grow for the cattle, and vegetation for the service of man, that he may bring forth food from the earth . . . and bread which strengthens man's heart" (Psalms 104:14-15).

1. D. Belobrajdic and A. Bird, "The potential role of phytochemicals in wholegrain cereals for the prevention of type-2 diabetes," *Nutrition Journal, BioMed Central*, 2013, <https://nutritionj.biomedcentral.com/articles/10.1186/1475-2891-12-62>.
2. E.Q. Ye, et al., "Greater Whole-Grain Intake Is Associated with Lower Risk of Type 2 Diabetes, Cardiovascular Disease, and Weight Gain," *Journal of Nutrition*, 142.7 (2012): 1304-313.
3. "Whole Grains," *The Nutrition Source, Harvard T.H. Chan*, <https://www.hsph.harvard.edu/nutritionsource/whole-grains/>.
4. L. H. Markiewicz, et al., "Diet shapes the ability of human intestinal microbiota to degrade phytate—in vitro studies," *National Center for Biotechnology Information*, <https://www.ncbi.nlm.nih.gov/pubmed/23551617>.



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