

The Paleo Diet: Possible Eating Habits of a Caveman

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ABSTRACT

The Paleolithic Diet, a diet based on evolutionary nutrition, promotes the consumption of foods that can be found in the wild and could have been consumed by our Paleolithic ancestors with only simple preparation. The Diet suggests that to maintain good health we should eat like the average caveman. Lean meats and produce are the foods of choice. Cereal grains, dairy, and legumes, foods introduced after the agricultural revolution, are to be avoided because our bodies have not had enough time to adapt to them. Loren Cordain PhD, the creator of this diet, claims that by avoiding these foods humans can prevent a variety of modern health problems. He promotes a low carb approach and disputes the positive view of whole grains by suggesting that the high anti-nutrient content of whole grains could pose a variety of health problems. He defines anti-nutrients as substances that interfere with the proper breakdown and use of other nutrients in the body. He states the high phytate content of whole grains may be harmful. Phytate prevents calcium absorption in the body. I was skeptical about the low carb approach of the Paleo Diet especially because of the elimination of whole grains. I hypothesized eliminating whole grains could pose health complications. In researching peer-reviewed scientific journals I found information about the health benefits of whole grains along with the negative health effects of a diet lacking carbohydrates and whole grains. Details of the Paleo Diet are specified. Risks of this diet are especially from its lack of whole grains.

INTRODUCTION

The basic idea of the Paleolithic Diet (Paleo Diet) is the idea that the majority of the foods humans eat were not present in prehistoric times and were, therefore, not consumed during most of human evolution. With the agricultural revolution about 10,000 years ago came a drastic change in the human diet from cereal grains, dairy, and processed foods. These foods soon became a staple in the human diet and according to the Paleo Diet, this has been a key component in the spread of heart disease, cancer, diabetes, and a variety of autoimmune diseases present in modern society. The key to the Paleo Diet is to eliminate these foods that were introduced after the agricultural revolution and instead eat only the foods that humans have been adapted to handle for thousands of years. The Paleo Diet includes lean meats and seafood in moderation, along with an abundance of fruits and vegetables. Cereal grains, dairy, and legumes are to be avoided. The basic rule when following the Paleo Diet is to only consume foods that are found in the wild and would be considered edible with little preparation or processing. The Paleo Diet claims to control weight, provide a strong athletic base, and provide good overall health.

The creator of the Paleo Diet, Dr. Loren Cordain, first heard of a Paleolithic diet when he was a young athlete, looking for the most appropriate diet for his active lifestyle. He looked into numerous vegetarian options, but was generally unhappy with his results. He began to study evolutionary nutrition and believed that humans were eating the wrong foods, based on genetic heritage. He conducted studies of animals and of certain human populations to further explore his notion that foods introduced after the agricultural revolution are a cause of various health problems. One of the main foods he studied was whole wheat, even though this is generally believed to have many health benefits (3). He claimed that the high phytate content of whole grains could inhibit mineral metabolism, so important nutrients would not be processed effectively for the human body (7). Iron deficiency is claimed to be one of the most common health problems in modern society because its absorption is reduced by cereal grains. Whole wheat also contains anti-nutrients such as lectin that interact with the immune system and the gastrointestinal tract making humans frequently sick. Cordain claims that people who eat high carb diets often have meals with high glycemic indices and develop higher levels of cardiovascular disease, even though they may not be consuming meat (1). He feels that people should re-evaluate their diets and consider the dangers of the grains they consume. Cordain’s view of whole grains is in juxtaposition to the information that has come out recently favoring the benefits whole grains (1). I hypothesized that the lack of whole grain consumption in the Paleo Diet may cause risks to good health.

METHOD

I started my research for this poster by looking at the commercial website for the Paleo Diet. The majority of my research following this came from peer-reviewed and academic articles dealing with nutrition. Each source had a reputable works cited attached so I could find the supporting information and make sure it was valid.

RESULTS

In researching whole grains through academic literature, I have found that Cordain’s view of grains is quite misleading. He claims that including whole grains in one’s diet could have serious health consequences. In reality, a diet complete with whole grains provides a variety of substantial health benefits. Diets rich in carbohydrates have been associated with high glycemic indices, and a high glycemic index does increase the risk of diabetes and obesity. Starchy, refined carbs are easily digested and could therefore lead to these negative effects. However, this is not the case with whole grain products. The body takes a long time to process whole grain products, helping maintain proper sugar and insulin levels (9).

Though Cordain speaks of the negative effects of the anti-nutrients of whole grains, research has suggested that they in fact offer many positive effects. The anti-nutrients present in whole grains have been found to reduce the risk of breast and colon cancer and have also been shown to lower cholesterol. These anti-nutrients, such as protease inhibitors, phytic acid, phenolics, and saponins also help a person’s body to fight against cancer by blocking carcinogens before they have the chance to interact with cells (6). This is an example of the protective component of whole grains.

FIGURE 3

This shows the structure of a whole grain of wheat and where each component of the grain is located. Each component of a grain of whole wheat contains important aspects to help fight against disease and promote good overall health. (10)

FIGURE 1

As seen in this table, Walter Willett recommends whole grain foods to be eaten at most meals. (9)

FIGURE 2

Association between whole-grain intake and fasting plasma insulin concentrations by BMI: BMI < 30 (- - - -; n = 2123) and BMI 30 (—; n = 624). Values were adjusted for age, sex, energy intake, treatment of hypertension, smoking, alcohol intake, multivitamin use, current estrogen replacement therapy, physical activity, and BMI. *P* for trend = 0.10 for BMI < 30 and 0.003 for BMI 30; *P* = 0.02 for the interaction between BMI and whole-grain intake. (4)

RESULTS(cont.)

Grains provide an ample source of important nutrients that must be included to provide good health. Dietary fiber helps to reduce blood cholesterol levels and in doing so lowers the risk of cardiovascular disease. B vitamins found in whole grains play a major role in metabolism and help to release energy from food. B vitamins are also essential for maintaining a healthy nervous system. The magnesium provided in whole grains helps to build strong bones, while selenium promotes a healthy immune system (8). Diets lacking carbs often lack the chemical compounds known as phytochemicals that are found in whole grains and help strengthen the immune system to fight disease (3). In a study found in *The American Journal of Clinical Nutrition* the offspring of the subjects in the Framingham study were studied to find the effects of whole grains on cardiovascular disease. Whole grain intake was found to be favorably associated with reduced metabolic risk factors for type II diabetes and cardiovascular disease. Those who consumed a larger amount of whole grains were found to have lower BMI, waist-hip ratio, total cholesterol, and fasting insulin (4). Studies have continued to find that consuming whole grains lowers the risk of cardiovascular diseases.

According to Walter Willett’s widely accepted food pyramid shown in Figure 1, whole grain food should be eaten at most meals (9). The body needs carbohydrates for energy; it just needs the right type of carbohydrate to maintain stable health. Carbohydrates provide fuel for physical activity and organ functions. Though low carb diets may be attractive because they help individuals to lose weight quickly, one should be cautious about this instant gratification. No one knows exactly what the long-term effects of a low carb diet include (9). A balanced diet of carbs can help an individual to maintain a healthy weight, by providing sufficient energy without a substantial amount of calories or fat. Grain lipids are 75% unsaturated and a healthy choice over meat (6). Research indicates that fiber rich diets full of whole grain carbs provide a feeling of fulfillment. Feeling full can help reduce unnecessary calorie intake and provide a way to maintain weight loss for the long term (3). Meat is a big source of fat in the diet and even lean meats like the ones suggested by the Paleo Diet provide a substantial amount of fat. The saturated fats abundant in domesticated animals are quite hazardous to one’s health.

DISCUSSION

Our Paleolithic ancestors may not have consumed whole grains. Yet grains have been seen to provide a multitude of health benefits. A diet complete with whole grain carbohydrates provides something that a diet filled with meat cannot. This type of diet provides essential nutrients to help the body keep on a healthy track while combating cardiovascular disease and forms of cancer. Whole grains provide a stable source of energy without the saturated fat from meats. I realize that the Paleo Diet does not advocate eating solely meat; Dr. Cordain also suggests an abundance of fruits and vegetables. I have seen no evidence disputing the benefits of fruits and vegetables as they are essential to a healthy diet and include fiber and many nutrients seen in whole grains. The reason I am skeptical of his approach is because it would be hard for a person to gain all of their fiber from one source. Whole grains provide a rich supply of fiber and nutrients imperative to maintaining good health while decreasing hunger. If a person feels filled they will generally not consume as much food. As studies have shown, this is reason to believe that consuming a diet rich in whole grains could promote weight loss. Low carb diets tend provide little evidence for lasting weight control. Low carb dieters often go frequently on and off of their diets. It seems like this would make a person’s system unstable. An article in the *Annual Review of Public Health* describes the struggle to find “the forest through truculent trees” (5). There Dr. Katz refers to finding the truth about health amidst the “truculent trees” of competing dietary claims. As I read this article I realized that nutrition can be very subjective. It is hard to know exactly who to believe, and decide which issues are more pertinent than others. It is hard to find truth while sifting through the forest made up of claims for low carb vs. high carb diets. I tried to find reliable sources and studies to support and at the same time disprove my hypothesis, yet often I was stuck when deciding which information was more accurate. I have tried to explain some clear examples of the benefits to a whole grain diet vs. the claims of the Paleo diet. While I hope my research is understood, I feel that it is necessary for the reader to find his or her own way through the “trees” I have created in making this poster.

SOURCES

- 1.) Cordain, Dr. L. The Paleo Diet the World’s Healthiest Diet. 2006. 16 Sept. 2007 <http://thepaleodiet.com>
- 2.) Cordain, L, Florant, GL, Kelher, M, Li, Y, Watkins, BA. “Fatty Acid Analysis of Wild Ruminant Tissues: Evolutionary Implications for Reducing Diet-Related Chronic Disease.” European Journal of Clinical Nutrition (2002): 181-191. 16 Sept.2007 <http://thepaleodiet.com/articles/final%20Fatty%20Acid%20PDF.pdf>
- 3.) “For Your Health.” Whole Grains Bureau. 25 Sept 2007 <http://www.wholegrainsbureau.ca/for_your_health>
- 4.) Jaques, Paul F, Liu, Simin, McKeown, Nicola M, Meigs, James B, Wilson, Peter WF. “Whole-Grain intake is Favorably Associated with Metabolic Risk Factors for Type II Diabetes and Cardiovascular Disease in the Framingham Offspring Study.” The American Journal of Clinical Nutrition 76.2 (2002): 390-398. 27 Sept. 2007 <http://www.ajcn.org>.
- 5.) Katz, David L. “Competing Dietary Claims for Weight Loss: Finding the Forest Through Truculent Trees.” Annual Review of Public Health 26(2005): 61-88. 17 Sept. 2007.<http://arjournals.annualreviews.org>.
- 6.) Slavin, Joanne. “Whole Grains and Human Health.” Nutrition Research Reviews 17 (2004) 99-110. 25 Sept. 2007 <<http://www.enlink.org/pt/re/nestle/abstract.00055138-2000406000-00009.htm>>
- 7.) “The Paleolithic Diet and its Modern Implications: an Interview with Loren Cordain PhD.” Loren Cordain, PhD Professor, Dept. of Exercise and Sports Science Colorado State University, Fort Collins, Colorado 80523 USA. Sept. 25, 2007. <http://chetday.com/cordaininterview.htm>.
- 8.) United States Department of Agriculture. “Inside the Pyramid: Why is it Important to Eat Grains, Especially Whole Grains?” My Pyramid.Gov 25 Sept. 2007 http://www.mypyramid.gov/pyramid/grains_why-print.html.
- 9.) “What Should You Really Eat?” Harvard School of Public Health. 26 Sept. 2007 <http://www.hsph.harvard.edu/nutritionsource/pyramids.html>.
- 10.) “The Whole Grain” Nutricoach. 23 Oct. 2007 <http://www.nutricoach.net/chart/wholegrain.gif>.