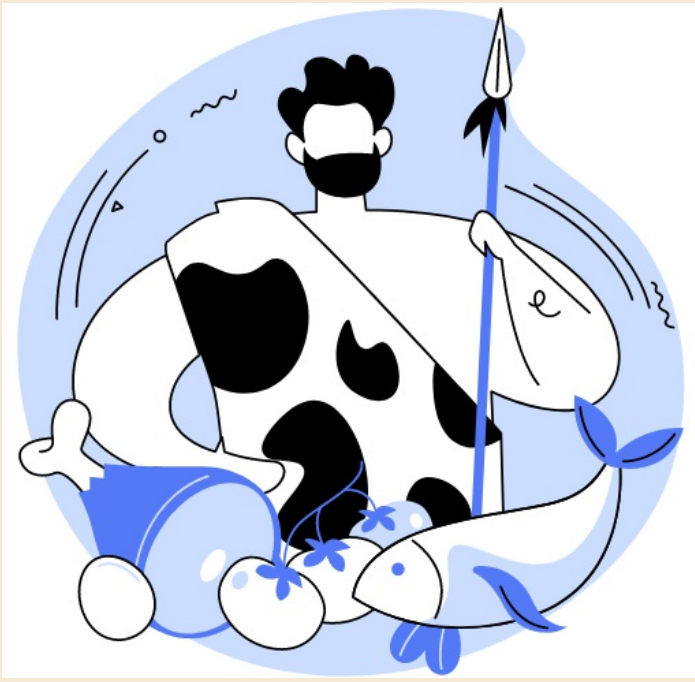
Microscopic Colitis Foundation

MICROSCOPIC COLITIS NEWSLETTER

Volume 8, Issue 5
March, 2022

# How "Paleo" is the Paleo Diet?



**This article discusses:**

1. **Health benefits (or absence of health benefits) of the paleo diet**
2. **Health benefits (or absence of health benefits) of DNA-based diets**
3. **Advantages and disadvantages of organic foods**

The paleo diet is often adopted by those who have food sensitivities, and those who want to lose weight. But just how paleo is most of the paleo diet recommendations? How do they compare with an original paleo diet? True paleo foods no longer exist, at least not in their original form, or with equivalent nutritional value. These days virtually all foods have undergone some sort of processing before they become available to consumers. And most foods have been transported for many miles — in some cases, from the other side of the world. And the soils on which most plants grow, and animals graze, no longer have the mineral content that they had back during the Paleolithic period. Consequently, those plants, and the meat from those animals, no longer have the nutritional value they had back during the Paleolithic period. It might be interesting to look at some examples of the health changes that have taken place among some of the native people on this planet who had continued to eat a paleo diet that was as close to their ancestral paleo diet as possible, up until about 50 or 60 years ago. As they began to eat a more Western diet, their once enviable health began to decline to the unenviable levels of many of the rest of us. The original paleo diet included only local foods.

With no means of transportation available for bringing in food from distant places, our ancestors living during the Paleolithic period always ate whatever they could find, wherever they lived on the

planet. Those who lived in temperate regions typically had a significant amount of variety in their diets, which usually varied with the seasons. Of course, the closer they lived to the equator, the less the seasons mattered, and there was a good variety of food available year-round. In stark contrast, those who lived in Arctic regions, or at high altitude, above the tree line, had an extremely limited diet, consisting almost exclusively of meat, since plant-based foods are extremely limited in those climates.

**Is a paleo diet healthful?**

The original diets of our ancestors living during the Paleolithic period were certainly healthful. For example, most of the native people who lived in Arctic regions subsisted on a diet of fish (mostly fatty, oily fish), walrus, seal, and whale meat, proving that carbohydrates and fiber are totally unnecessary for good health. Although a few berries and tubers were available, the amounts eaten in traditional diets in Arctic regions were very limited. Today, of course, most Arctic residents have adopted a more typical Western diet, especially the younger people, many of whom are no longer learning the skills needed to be successful hunters, and as they continue to shift their diet choices to more Western foods shipped in from other parts of the world, their health is declining to the same levels as the rest of us who eat a Western diet. Previously rare diseases, such as diabetes and cardiovascular issues, have become as common as in Western societies.

**Cardiovascular risk has soared among these societies as carbohydrate intake has increased.**

A lot of controversy has surfaced regarding the incidence of cardiovascular issues among the Intuit native people, for example, with many researchers claiming that the data show that they have the same basic cardiovascular risk as everyone else. But other researchers point to diet changes made over the last century, as the reason for the shift in cardiovascular risk (Husten, 2016, August 1)[1]. The traditional Eskimo diet contained large amounts of fatty fish, while more Western diets contain refined carbohydrates and sugar. The traditional Eskimo diet contained from 2 to 8% carbohydrates, and by the 1970s, carbohydrates had increased to about 40% of their diet. And presumably, their increased carbohydrate consumption was the primary driving force that led to their increased cardiovascular risk level.

**Diabetes has shown huge increases among the Inuits.**

The health status of the Inuits appears to have followed a similar pattern. Mouratoff and Scott found that between the years of 1967 and 1972, the incidence of diabetes among the Alaskan Inuit had increased from 0.7%, to 5.2% (Jørgensen, Bjeregaard, & Borch-Johnsen, 2002)[2]. Among the Inuit population of Greenland, the researchers noted that the risk of diabetes was associated with a family history of diabetes, age, body mass index, and high alcohol

consumption. At the other extreme, they found that frequent intake of fresh fruit and seal meat helped to lower the risk of developing diabetes. Based on those findings, diet has a much greater effect on these health issues than genetic evolutionary considerations.

**Tribes living near the equator also show similar patterns.**
The Tsimane people living in Bolivia, in the Amazon rain forest, still live a primitive lifestyle based on hunting, fishing, and subsistence farming. Researchers report that members of this tribe appear to have the lowest cardiovascular risk of any society on earth (Thompson, 2017, March 17)[3]. Although some grains are included in their diet, they don't eat any processed foods, and computed tomography (CT) scans prove that they have the healthiest arteries of any ethnic group known on the planet. It's worth noting that they don't lead a sedentary lifestyle — they typically walk for 6 or 7 hours every day. The men do so while hunting, and the women spend their time working in the fields.

The Tsimane people live with a significant amount of parasite and helminth-induced inflammation, due to the tropical climate in which they live. While inflammation levels of that magnitude would cause significant health issues for most of us, it doesn't seem to bother the Tsimane people. But note that in all these examples, the take away message, is that although the diets of our ancestors were extremely varied during the Paleolithic period, depending upon where in the world they lived, our personal lifestyle and diet habits trump our DNA, as far as our overall health is concerned.

**Are DNA-based diets beneficial?**

Although obviously, the human digestive system is extremely adaptable to different diets, the fact that most tribes living during the Paleolithic period evolved eating a unique diet that was specific to that region, suggests that it might be logical to conclude that basing our diets on our genetic heritage might be beneficial for our health. Using DNA data to select dietary foods is known as nutrigenomics. And as might be expected, there are many companies selling various supplements based on DNA test results that are claimed to be uniquely beneficial. Are they? Unfortunately, it appears that those claims have no basis in fact.

**Medical research shows poor correlation.**
In 2018, researchers at King's College in London, and Harvard Medical School set out to determine the extent of correlation between genetics and diet responses to certain foods. They studied the blood sugar and blood fat levels of 700 identical twins and 400 non-twins, after eating various foods. The analysis showed that less than 1/3 of the subjects' insulin and triglyceride levels were associated with genetics (Reinagel, 2019, September 27)[4]. Personal lifestyle habits such as sleep, exercise, stress, and gut microbes had a much greater effect on the diet responses of the subjects. In other words, how we live has a much greater effect on our health than where we live, or where our ancestors lived, at any time in the past.

**Non-paleo foods are associated with declining health.**
Apparently, the adaptability of the human body takes precedence over our evolutionary development, and allows us to thrive on virtually any diet that provides all the nutrients we need for good health. In contrast, diets that contain high percentages of foods that did not exist during the Paleolithic period, such as processed grains and sugar, are consistently associated with declining health.


**In a similar vein, are organic foods actually more nutritious?**
Most people tend to assume that organically produced foods are more nutritious than conventionally produced foods. But research data to verify that status are not always in agreement. Generally, though, according to the Mayo Clinic, organically produced foods tend to contain more antioxidants and omega-3 fatty acids, and lower levels of pesticide residues.

Other comparisons may vary. For example, the toxic metal cadmium tends to be lower in organically produced grains, but not in organically produced fruit and vegetables. And one of the downsides of buying organic products is that the risk of bacterial contamination is higher than for conventionally produced foods.

**Organic foods may be more acidic than conventionally produced foods.**
Every attempt to change production methods or inputs in agricultural production, results in trade-offs. For example, higher fertilization rates for agriculturally produced commodities results in higher production levels. And although this can't be found in the literature, the trade-off is lower nutritional levels, in most cases, especially lower protein levels. A general rule of thumb in agricultural production is, “The higher the production rate, the lower the resulting nutrient levels, especially protein.”

This can be easily visualized by considering that there are only finite amounts of input ingredients available for the growing crop to utilize in each acre of cropland, or land used for grazing. Although all of the available inputs on an acre of land will probably not be used, the percentage of those inputs that is used must be distributed across the total volume of the commodity produced. Therefore, the higher the yield, the lower the amount of inputs that each unit of production will contain. Statistics show that yields for organically produced crops are significantly lower than for conventionally produced crops. That implies that most organically produced foods may tend to contain higher protein levels than the same foods that are conventionally produced. Increased protein in food is normally an advantage. But for individuals who are concerned about excessive acidity in their diet, because of compromised kidney function or other health issues, increased protein levels can be a liability, because it can cause increased diet acidity, when compared with foods that have a lower protein level.

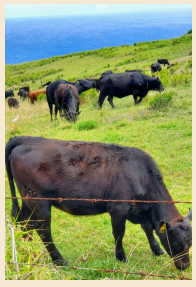
This line of reasoning would even apply to organically produced beef, for example, because lower yielding forage or grass, contains more protein than grass grown with higher fertilization rates. And this would imply that organically produced beef may tend to be more

acidic than conventionally produced beef. This effect would not necessarily apply to “grass fed” beef, however, because that grass might be heavily fertilized.

**Organic labels can be confusing.**
Even the term “organic” can be confusing. For example, “100% organic” does indeed mean the product was completely organically raised and processed (Mayo Clinic Staff,. n.d.)[5]. The term “organic” means that at least 95% of the ingredients must have been sourced from an organic origin, and the other 5% must be from a list of USDA approved additional ingredients. Labels that include the terms “made with organic”, or “organic ingredients”, must contain at least 70% organic ingredients, and the label must identify the ingredients that are organic for “made with organic” labels. The identification of those ingredients is voluntary for products labeled as containing “organic ingredients”, but it's not a legal acquirement.

**Note that “organic” and “natural” designations on a label are not equivalent.**
When a label indicates that a food is “natural”, that simply means that there are no artificial colors, flavors, or preservatives. It says absolutely nothing about the way that food was produced, nor does it say anything about the materials that were used during the growing phase of that plant or animal product.

**Free range does not imply organic production.**



Free range simply means that the animal or fowl had access to a pasture during at least a 120-day grazing season, and no growth hormones were used. But that doesn't rule out supplemental feeding, and in most parts of the US, supplemental feeding is a necessity for many months of the year, when natural forage is not available (such as during the winter, or during a drought).

**In summary**

**All of the foregoing evidence suggests that while many of the benefits of the paleo diet can be found in the inclusion of traditional healthy foods, the foods that are excluded, such as highly processed grains and sugar, may be even more important for long-term health. No scientific evidence exists to show that DNA-based diets have more than a minor effect on our health. By comparison, a relatively huge body of evidence exists to show that our lifestyle habits, and our prevailing environment, have a much greater influence on our long-term health regardless of our genetic heritage. Eating a healthful diet, avoiding (or at least, minimizing) highly processed foods and sugar, and getting sufficient sleep and exercise, appear to hold the key to good long-term health.**

---

**References**

1. Husten, L. (2016, August 1). CardioBrief: Changes in Eskimo Diet Linked to Increase in CHD. Retrieved from https://www.medpagetoday.com/cardiology/cardiobrief/59432

2. Jørgensen, M. E., Bjeregaard, P., Borch-Johnsen, K. (2002). Diabetes and impaired glucose tolerance among the Inuit population of Greenland. Diabetes Care, 25, 1766–1771. Retrieved from https://care.diabetesjournals.org/content/25/10/1766

3. Thompson, D. (2017, March 17). Remote Tribe May Have Healthiest Hearts on Earth. Retrieved from https://www.webmd.com/heart/news/20170317/remote-amazon-tribe-may-have-healthiest-hearts-on-earth

4. Reinagel, M. (2019, September 27). Personalized Nutrition: The Latest on DNA-Based Diets. Retrieved from https://www.scientificamerican.com/article/personalized-nutrition-the-latest-on-dna-based-diets/
5. Mayo Clinic Staff. (n.d.). Nutrition and healthy eating. Retrieved from https://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/in-depth/organic-food/art-20043880