Paleo:
A Misguided Approach to Optimal Health

GETTYIMAGES

PhysiciansCommittee
for Responsible Medicine

The Paleolithic era started about 2.5 million years ago and lasted until around 10,000 B.C. During this time, humans hunted and gathered their food. Their diets included fruits, vegetables, and meat. Today, people who follow paleo diets try to re-create this diet and avoid whole grains, beans, dairy, and refined sugar. There are many variations within the paleo diet, but diets that don't include grains or legumes and emphasize meat are harmful to health.[1]

Meat

Paleo diets typically include a lot of meat, fish, and shellfish. Meat consumption increases the risk of type 2 diabetes, heart disease, and cancer.

One study that supports the link between meat and diabetes followed about 512,000 Chinese adults for nine years. It found that as a person ate more red meat or fish, their risk of diabetes went up.[2] Even a single serving of less than 2 ounces of red meat increased risk of diabetes by 11%. Two ounces is about half the size of your palm. Other studies have come to similar conclusions. Researchers looked at multiple studies that included a total of 682,963 participants and found that people who consumed a lot of unprocessed red meat had a 15% higher risk of diabetes than those who consumed very little or no red meat. Processed red meat was even worse. It raised people's risk of diabetes by 27%.[3]

Eating meat also raises the risk of cardiovascular disease. Processed meats, such as bacon, deli meat, and hot dogs, are especially dangerous and make a person more likely to experience heart failure.[4] Unprocessed red meat also increases the risk of heart disease. One study found that eating just one 1.75-ounce serving of red meat daily increases a person's risk of heart disease by 9%.[5]

Red meat consumption is also associated with multiple cancer types. Breast, endometrial, colon, rectal, lung, and hepatocellular carcinoma cancers have all been linked to eating red meat, and even more cancer types have been linked to processed meat.[6] A 2019 study published in the *International Journal of Cancer* confirmed that red meat, processed meat, and poultry all increased the risk of colon cancer.[7] Data from the large, U.S.-based Sister Study found that breast cancer risk was more common in people who ate a lot of red meat.[4]

Meat from fish also comes with downsides. In particular, fish often contain heavy metals that have been linked to metabolic disease, cardiovascular disease, and harm to early human development, especially during pregnancy.[8,9]

Grains and Legumes

Diets that don't include grains (and that often downplay legumes) have been popular recently. But research regularly confirms that whole grains are healthy and an essential part of a balanced diet.[10] They are a fantastic source of carbohydrates, which is the best way to get energy to your brain and muscle cells.[11] Legumes are also excellent sources of complex carbohydrates and also contain gut-healthy fiber, protein, antioxidants, and micronutrients. Both legumes and whole grains are rich in B vitamins, phytochemicals (which have many health benefits), and fiber. Eating fiber-rich legumes and whole grains reduces a person's risk of heart disease and type 2 diabetes, helps with weight loss, improves blood pressure, and lowers cholesterol.[12,13,14] Currently, the average American consumes only about 16 grams of fiber per day, which is around half the recommended amount.[15,16] We suggest aiming for 40 grams.

People who don't eat grains and legumes leave out healthy sources of carbohydrates and miss out on fiber and other heart-healthy nutrients. This increases a person's risk of several poor health outcomes.[17] Low-carb diets increase a person's risk for cardiovascular disease, atrial fibrillation, and all-cause and cardiovascular mortality long-term. One study found that the group who ate the fewest carbohydrates had a 22% higher risk of dying than the group who ate the highest carbohydrates. The low-carb group had a 13% higher risk of dying from heart disease and an 8% increased risk of death from cancer. The study also found that low-carbohydrate diets did not help control blood sugar.[18]

Optimal Diet

Paleo diets try to re-create the diet of early humans. People who

eat this way assume our ancestors were eating a lot of meat and not eating any grains or legumes because they were not farming. This diet gets several things wrong. For one, modern humans started evolving long before the start of the Paleolithic era. Plant foods, including cereals, were probably a regular part of our ancestors' diets before farming started.[19] The modern paleo diet places a strong emphasis on meat. But hunter-gatherers probably got most of their energy from carbohydrates in fruit, starchy root vegetables, legumes, and grains. Meat may have made up only 3% of their diet. Paleolithic humans probably ate a lot more carbohydrates, fiber, micronutrients, and variety than we do today.[20] We are most adapted to this plant-centered diet and see great health improvements when our diet focuses on plants.

This is evidenced in places like the Seventh-day Adventist community in Loma Linda, Calif., or the Greek island of Ikaria, where diets are high in plant foods and low in animal products.[21] Seventh-day Adventist communities are mostly vegan, and very few people die from chronic diseases. Cancers like breast, colorectal, rectal, and lung are uncommon. People live between 4 and 7 years longer on average than other Californians who eat meat.[22] Plant-based diets like the ones practiced here improve cholesterol and reduce risk of cancer, cardiovascular disease, and death.[23]

The healthiest diets are plant-based, include plenty of whole grains, and avoid meat and other animal products. These diets can reverse heart disease, aid in weight loss, increase energy, protect against cancer, control blood sugar, reverse type 2 diabetes, improve digestion, and support general vitality.[24] Paleo diets, however, fall short on all these metrics. The optimal diet for health and disease prevention—a diet rich in whole grains, legumes, fruits, and vegetables—is a diet of the present and doesn't misunderstand the past.

References

1. Cambeses-Franco C, González-García S, Feijoo G, Moreira MT. Is the Paleo diet safe for health and the environment? *Sci Total Environ*. 2021;781:146717. doi:10.1016/j.scitotenv.2021.146717
2. Du H, Guo Y, Bennett DA, et al. Red meat, poultry and fish consumption and risk of diabetes: a 9 year prospective cohort study of the China Kadoorie Biobank. *Diabetologia*. 2020;63(4):767-779. doi:10.1007/s00125-020-05091-x
3. Zhang R, Fu J, Moore JB, Stoner L, Li R. Processed and unprocessed red meat consumption and risk for type 2 diabetes mellitus: an updated meta-analysis of cohort studies. *Int J Environ Res Public Health*. 2021;18(20):10788. doi:10.3390/ijerph182010788
4. Lo JJ, Park YMM, Sinha R, Sandler DP. Association between meat consumption and risk of breast cancer: findings from the Sister Study. *Int J Cancer*. 2020;146(8):2156-2165. doi:10.1002/ijc.32547
5. Papier K, Knuppel A, Syam N, Jebb SA, Key TJ. Meat consumption and risk of ischemic heart disease: a systematic review and meta-analysis. *Crit Rev Food Sci Nutr*. 2023;63(3):426-437. doi:10.1080/10408398.2021.1949575
6. Farvid MS, Sidahmed E, Spence ND, Mante Angua K, Rosner BA, Barnett JB. Consumption of red meat and processed meat and cancer incidence: a systematic review and meta-analysis of prospective studies. *Eur J Epidemiol*. 2021;36(9):937-951. doi:10.1007/s10654-021-00741-9
7. S Deoula M, El Kinany K, Huybrechts I, et al. Consumption of meat, traditional and modern processed meat and colorectal cancer risk among the Moroccan population: a large-scale case-control study. *Int J Cancer*. 2020;146(5):1333-1345. doi:10.1002/ijc.32689
8. Park JS, Ha KH, He K, Kim DJ. Association between blood mercury level and visceral adiposity in adults. *Diabetes Metab J*. 2016;41(2):113-120.
9. Saavedra S, Fernández-Recamales Á, Sayago A, Cervera-Barajas A, González-Domínguez R, Gonzalez-Sanz JD. Impact of dietary mercury intake during pregnancy on the health of neonates and children: a systematic review. *Nutr Rev*. 2022;80(2):317-328. doi:10.1093/nutrit/nuab029
10. Poutanen KS, Kårlund AO, Gómez-Gallego C, et al. Grains – a major source of sustainable protein for health. *Nutr Rev*. 2022;80(6):1648-1663. doi:10.1093/nutrit/nuab084
11. Dienel GA. Brain glucose metabolism: integration of energetics with function. *Physiol Rev*. 2019;99(1):949-1045. doi:10.1152/physrev.00062.2017
12. Polak R, Phillips EM, Campbell A. Legumes: health benefits and culinary approaches to increase intake. *Clin Diabetes*. 2015;33(4):198-205. doi:10.2337/diaclin.33.4.198
13. Bielefeld D, Grafenauer S, Rangan A. The effects of legume consumption on markers of glycaemic control in individuals with and without diabetes mellitus: a systematic literature review of randomised controlled trials. *Nutrients*. 2020;12(7):2123. doi:10.3390/nu12072123
14. Angeles JGC, Villanueva JC, Uy LYC, et al. Legumes as functional food for cardiovascular disease. *Appl Sci (Basel)*. 2021;11(12):5475. doi:10.3390/app11125475
15. Increasing Fiber Intake. University of California San Francisco Health. Accessed January 31, 2023. https://www.ucsfhealth.org/Education/Increasing Fiber Intake
16. Quagliani D, Felt-Gunderson P. Closing America's fiber intake gap: communication strategies from a Food and Fiber Summit. *Am J Lifestyle Med*. 2016;11(1):80-85. doi:10.1177/1559827615588079
17. Miller KB. Review of whole grain and dietary fiber recommendations and intake levels in different countries. *Nutr Rev*. 2020;78(suppl 1):29-36. doi:10.1093/nutrit/nuz052
18. Churuangsuk C, Lean MEJ, Combet E. Low and reduced carbohydrate diets: challenges and opportunities for type 2 diabetes management and prevention. *Proc Nutr Soc*. 2020;79(4):498-513. doi:10.1017/S0029665120000105
19. Buckley HR, Buikstra JE. Stone Agers in the Fast Lane? How Bioarchaeologists Can Address the Paleo Diet Myth. In: Buikstra JE, ed. *Bioarchaeologists Speak Out: Deep Time Perspectives on Contemporary Issues*. Bioarchaeology and Social Theory. Springer International Publishing; 2019:161-180. doi:10.1007/978-3-319-93012-1_7
20. Challa HJ, Bandlamudi M, Uppaluri KR. Paleolithic Diet. In: *StatPearls*. StatPearls Publishing; 2022. Accessed January 31, 2023. http://www.ncbi.nlm.nih.gov/books/NBK482457/
21. Liu T, Gatto NM, Chen Z, et al. Vegetarian diets, circulating miRNA expression and healthspan in subjects living in the Blue Zone. *Precis Clin Med*. 2020;3(4):245-259. doi:10.1093/pcmedi/pbaa037

23526-NTR

PhysiciansCommittee for Responsible Medicine
5100 Wisconsin Ave., NW, Suite 400 | Washington, DC 20016
202-686-2210 | info@pcrm.org | PhysiciansCommittee.org

References (continued)

22. Fraser GE, Cosgrove CM, Mashchak AD, Orlich MJ, Altekruse SF. Lower rates of cancer and all-cause mortality in an Adventist cohort compared with a US Census population. *Cancer.* 2020;126(5):1102-1111. doi:10.1002/cncr.32571

23. Oussalah A, Levy J, Berthezène C, Alpers DH, Guéant JL. Health outcomes associated with vegetarian diets: an umbrella review of systematic reviews and meta-analyses. *Clin Nutr.* 2020;39(11):3283. doi:10.1016/j.clnu.2020.02.037

24. Kahleova H, Levin S, Barnard ND. Vegetarian dietary patterns and cardiovascular disease. *Prog Cardiovasc Dis*. 2018;61(1):54-61. doi:10.1016/j.pcad.2018.05.002

PhysiciansCommittee for Responsible Medicine

5100 Wisconsin Ave., NW, Suite 400 | Washington, DC 20016
202-686-2210 | info@pcrm.org | PhysiciansCommittee.org