12 Studies from 2019 That Make the Case for Avoiding Meat

By Joel Kahn, MD
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In the 42 years I have eaten a plant-based diet, and in my 30 years as a cardiologist, I have studied the medical literature that supports a diet of fruits, vegetables, legumes, and whole grains for heart health and overall well-being. Never in my experience, however, have I seen such a flurry of scientific literature that supports a whole-food, plant-based diet as I have seen in 2019, and the year is not over yet. Although I honor hard-working and honest people, the studies listed here indicate that it is a very bad year to be a butcher and a very good year to go as plant-based as possible.

1. Adventist Health Study-2: Unprocessed Red Meat and Heart Disease

The Adventist Health Study was established in 1958 after data indicated that residents of Loma Linda, California, outlived the average Californian by a decade or more. Loma Linda is now known as one of the five Blue Zones, or pockets of centenarian longevity worldwide. Red meat consumption is lower in the Adventist community than in the rest of the U.S., so researchers analyzed data to determine if trends in meat consumption and mortality exist in a low-meat-consumption population. The findings: Among 72,149 study participants during a mean follow-up of 12 years, there were 7,961 total deaths, including 2,598 heart deaths and 1,873 cancer deaths. Unprocessed red meat was associated with an increased risk of all-cause mortality and heart mortality. Processed meat alone was not significantly associated with risk of mortality. The combined intake of red and processed meat was associated with all-cause mortality and heart mortality. These findings suggest moderately higher risks of all-cause and heart mortality associated with red and processed meat, even in a low-meat-intake population.

2. Harvard Meta-Analysis: Plant Protein and Cholesterol

Researchers at Harvard published an analysis of 36 randomized clinical trials studying the effects of replacing red meat with a variety of other foods. Among 1,803 participants, researchers found that diets higher in quality plant protein sources, such as legumes, soy, and nuts, resulted in lower levels of both total and LDL ("bad") cholesterol compared with diets higher in red meat.

3. Global Burden of Disease Study: More Plants, Less Meat

In April I wrote about the latest Global Burden of Disease Study, which found that 22 percent of deaths worldwide—11 million a year—are due to diet choices. Diets high in red and processed meat made the list of the top 15 dietary factors in death. Notably, meat consumption was a less powerful predictor of death compared with inadequate intake of whole grains, fruits, nuts and seeds, and vegetables. Overall, packing your plate with whole plant foods lowers your risk of disease.

4. Kuopio Finnish Heart Study: Protein and Heart Disease

Since 1984 a group of men have been studied in Finland for the development of heart disease. An analysis of 2,641 men was reported in terms of diet and risk of early death. During an average follow-up of 22 years, 1,225 participants died due to disease. Higher ratios of animal protein to plant protein and higher meat intake were associated with increased mortality. Higher intake of total protein and animal protein had borderline statistically significant associations with increased mortality risk. When evaluated based on disease history at baseline, the association of total protein with mortality was stronger among those with a history of type 2 diabetes, cardiovascular disease, or cancer.

5. U.K. BioBank: Red and Processed Meat and Colorectal Cancer

Most previous studies on diet and colorectal cancer were based on diets consumed during the 1990s. This new study looked at data from 475,581 subjects who filled out short food-frequency questionnaires between 2006

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and 2010. During an average six-year follow-up, 2,609 cases of colorectal cancer occurred. Participants who reported consuming a daily average of 76 grams of red and processed meat were 20 percent more likely to develop colorectal cancer than those who ate 21 grams daily. Participants reporting the highest intake of fiber from bread and breakfast cereals had a 14 percent lower risk of colorectal cancer.

6. Pan-European EPIC Cohort and Heart Disease

There is uncertainty about the relevance of animal foods to the etiology of heart disease. A prospective study assessed the diets of 409,885 men and women in nine European countries using validated questionnaires, calibrated using 24-hour recalls. Over 13 years, the risk of heart disease rose with every 100-gram increase in daily red and processed meat intake. Consumption of red and processed meat was positively associated with serum non-HDL cholesterol concentration and systolic blood pressure. The conclusion was that the risk for heart disease was positively associated with consumption of red and processed meat.

7. Scientific Advisory Committee of Nutrition in the UK

Advisors to the government of the United Kingdom last reviewed saturated fat recommendations for the English public in 1994. This year they updated that evaluation in a 443-page report that looked at new research studies since that time. The 2019 panel did not buy into the notion that butter, or meat, is back. They decided to stick with the 1994 recommendation that Brits limit their saturated fat intake to 10 percent or less of total calories. They specifically pointed to meat, butter, pizza, full-fat dairy, and baked goods made with butter, lard, and oils as primary sources of saturated fat intake in the U.K.

8. TMAO and the Paleo Diet

One of the hot dietary trends in the past decade has been to ditch grains, legumes, and dairy and try to mimic a meat-heavy Paleolithic diet. In a randomized study done in Australia of subjects eating a typical local diet versus a Paleo diet, researchers measured TMAO, a metabolite that is created by ingesting red meat. TMAO has been shown to increase atherosclerosis of blood vessels, platelet clumping and clotting, and scarring of kidney and heart tissue—all adverse developments. Measurements of TMAO blood levels were higher in the Paleo dieters while fiber intake was much lower, both concerning developments.

9. Neu5Gc and Hardening of Arteries

Although studies have linked heart disease with the consumption of animal foods in general and red meat in particular, we are still learning new pathways. A recent animal-research study describes in detail one such pathway to developing damaged heart arteries. In most species, a compound called Neu5Ac is produced and converted by an enzyme to Neu5Gc, which can be found on blood vessels and other tissues. It turns out that humans lost the enzyme and therefore cannot produce Neu5Gc. Red meat is rich in Neu5Gc. In this new study, an animal model was created that mimicked humans' inability to convert the A to the G version of the compound. When the lab animals were then fed a diet rich in Neu5Gc and fats (such as meat), they developed 2.4 times the arterial atherosclerosis of the control animals. This study identifies another biological pathway that makes humans poorly suited to depend on red meat for nourishment.

10. Methionine and Cancer Therapy

Methionine is an essential amino acid found in animal and plant foods, but it exists in much higher concentrations in red meat, pork, poultry, fish, and eggs compared with plant foods. To test the theory that a low-methionine (plant-strong) diet may slow aging and improve insulin responsiveness, researchers at Duke University studied two models of cancer in mice fed an average and a low-methionine diet. They reported that there were differences in "one carbon metabolism" and cancer growth and that the low-methionine diet enhanced responsiveness to cancer therapy. They then showed in healthy human volunteers that eating a low-methionine diet for three weeks produced the same changes in "one carbon metabolism" as the mice. The easiest way to reduce methionine intake is to limit or eliminate animal foods on the plate.

11. Red Meat Allergies Triggered by Tick Bites

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Could anyone have anticipated the serious allergy to red meat that is spreading across the USA? Indeed, the Lone Star tick is spreading from the East Coast to middle America, as far north as Maine and Minnesota, and as far south as Texas. Those who are bitten by this tick can develop an antibody to alpha-gal, a carbohydrate molecule in red meat. After the tick bite, the next meat meal may result in hives, wheezing, runny nose, or even anaphylaxis requiring medical care and use of an EpiPen. There is no cure except avoiding meat, just like others avoid tree nuts. In one study in Virginia, heart patients with antibodies to alpha-gal from the tick bite had more heart disease than those who had not reacted. A 2019 study found that the risk of developing the allergy following a tick bite may be greater than previously reported.

12. ARIC Prospective 25-Year Study: Whole Plant Foods for the Win

Recently reported was an analysis of over 12,000 U.S. residents who filled out food questionnaires on several occasions and were followed for 25 years. None had heart disease on entry into the study and they were not a selected population (like the Adventists) but represented a cross-section of the USA. At follow-up, those following a healthy plant-based diet—rich in fruits, vegetables, grains, and legumes—had less heart disease, fewer heart deaths, and less death overall. The authors from Johns Hopkins University recommended reducing animal foods and bulking up on whole plant foods to reduce disease risk.

Overall, these studies, drawing data from nearly 200 countries and many prestigious universities, support exclusively or predominantly eating whole foods of plant origin such as fruits, vegetables, whole grains, and legumes, and reducing or eliminating meat entrees. If you happen to know a butcher, hug him or her, but do not spend your dollars there. It is clear that 2019 is a very tough year to be a butcher.