

Older women who ate more plant protein had lower risk of premature, dementia-related death

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Postmenopausal women who ate high levels of plant protein had lower risks of premature death, cardiovascular disease and dementia-related death compared with women who ate less plant proteins, according to new research published today in the *Journal of the American Heart Association*, an open access journal of the American Heart Association.

Previous research has shown an association between diets high in [red meat](#) and [cardiovascular disease](#) risk, yet the data is sparse and inconclusive about specific types of proteins, the study authors say.

In this study, researchers analyzed data from more than 100,000 [postmenopausal women](#) (ages 50 to 79) who participated in the national Women's Health Initiative study between 1993 and 1998; they were followed through February 2017. At the time they enrolled in the study, participants completed questionnaires about their diet detailing how often they ate eggs, dairy, poultry, red meat,

fish/shellfish and plant proteins such as tofu, nuts, beans and peas. During the study period, a total of 25,976 deaths occurred (6,993 deaths from cardiovascular disease; 7,516 deaths from cancer; and 2,734 deaths from dementia).

Researchers noted the levels and types of [protein](#) women reported consuming, divided them into groups to compare who ate the least and who ate the most of each protein. The median percent intake of total energy from animal protein in this population was 7.5% in the lowest quintile and 16.0% in the highest quintile. The median percent intake of total energy from plant protein in this population was 3.5% in the lowest quintile and 6.8% in the highest quintile.

Among the key findings:

- Compared to postmenopausal women who had the least amount of plant protein intake, those with the highest amount of plant protein intake had a 9% lower risk of death from all causes, a 12% lower risk of death from cardiovascular disease and a 21% lower risk of dementia-related death.
- Higher consumption of processed red meat was associated with a 20% higher risk of dying from dementia.
- Higher consumption of unprocessed meat, eggs and [dairy products](#) was associated with a 12%, 24% and 11% higher risk of dying from cardiovascular disease, respectively.
- Higher consumption of eggs was associated with a 10% higher risk of death due to cancer.
- However, higher consumption of eggs was associated with a 14% lower risk of dying from dementia, while higher poultry consumption was associated with a 15%

lower risk.

"It is unclear in our study why eggs were associated with a higher risk of cardiovascular and cancer death," said lead study author Wei Bao, M.D., Ph.D., an assistant professor of epidemiology at the University of Iowa in Iowa City. "It might be related to the way people cook and eat eggs. Eggs can be boiled, scrambled, poached, baked, basted, fried, shirred, coddled or pickled or in combinations with other foods. In the United States, people usually eat eggs in the form of fried eggs and often with other foods such as bacon. Although we have carefully accounted for many potential confounding factors in the analysis, it is still difficult to completely tease out whether eggs, other foods usually consumed with eggs, or even non-[dietary factors](#) related to egg consumption, may lead to the increased risk of cardiovascular and cancer death."

Researchers noted that substitution of total red meat, eggs or dairy products with nuts was associated with a 12% to 47% lower risk of [death](#) from all causes depending on the type of protein replaced with nuts.

"It is important to note that dietary proteins are not consumed in isolation, so the interpretation of these findings could be challenging and should be based on consideration of the overall diet including different cooking methods," said Yangbo Sun, M.D., Ph.D., co-author of the study, a postdoctoral research scholar at the University of Iowa in Iowa City and currently an assistant professor of epidemiology at the University of Tennessee Health Science Center.

The analysis also revealed that women who ate the highest amount of animal protein such as meat and dairy were more likely to be white and have a higher education and income, and they were more likely to be past smokers, drink more alcohol and be less physically active. Moreover, these women were more likely to have Type 2 diabetes at the start of the study, a family history of heart attacks and a higher body mass index—all risk factors for cardiovascular disease.

"Our findings support the need to consider dietary protein sources in future dietary guidelines," said

Bao. "Current dietary guidelines mainly focus on the total amount of protein, and our findings show that there may be different health influences associated with different types of protein foods."

2020-2025 Dietary Guidelines for Americans, jointly published by the U.S. Departments of Agriculture (USDA) and Health and Human Services (HHS), recommend eating a variety of protein foods: low-fat meat, low-fat poultry, [eggs](#), seafood, beans, peas, lentils, nuts, seeds and soy products including at least 8 ounces of cooked seafood per week.

The AHA's 2020 Dietary Cholesterol and Cardiovascular Risk advisory notes that given the relatively high content of cholesterol in egg yolks, it remains advisable to limit intake. Healthy individuals can include up to one whole egg or the equivalent daily.

The study had several limitations including that it was observational, based on self-reported data at the beginning of the study and lacked data on how the proteins were cooked. In addition, the findings may not apply to younger women or men.

More information: *Journal of the American Heart Association* (2021). [DOI: 10.1161/JAHA.119.015553](#)

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